A Study of the Relationships Between Student Achievement and Student Perception of Teacher Effectiveness.

Yvonne Marie French

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EFFECTIVENESS.

THE LOUISIANA STATE UNIVERSITY AND
AGRICULTURAL AND MECHANICAL COL., PH.D., 1979

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A STUDY OF THE RELATIONSHIPS BETWEEN STUDENT ACHIEVEMENT
AND STUDENT PERCEPTION OF TEACHER EFFECTIVENESS

A Dissertation
Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy
in
The Interdepartmental Program
of Education

by
Yvonne Marie French
B.S., Louisiana State University, 1972
M.Ed., Louisiana State University, 1975
August 1979
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ABSTRACT

The purpose of this study was to examine the relationship between student achievement and student perception of teacher effectiveness. The populations used were mathematics and English students from grades seven through twelve attending a certain high school in Baton Rouge, Louisiana.

A form was designed to measure student perception of teacher effectiveness. Its reliability was determined by means of a "test-retest" correlation study.

Scores of students on the second administration of the Student Perception of Teacher Effectiveness form (SPTE₂) were correlated with student achievement (ERB) scores in the areas of mathematics and English to determine their relationship in the following manner: (1) a partial correlation study examined the relationship between scores of students on the SPTE₂ form and their ERB scores with the influence of learning level removed; (2) a correlation study examined the relationship between scores of students on the SPTE₂ form and their ERB scores at specific learning levels.

The SPTE₂ variables were a mean value for the entire form, six "factor" values representing defined areas of teacher effectiveness, and twenty-four item values. The ERB variables were scores measuring proficiency in "Reading," "Mechanics of Writing," and "Expression"
when tests involved the English Student Populations, and mastery of "Mathematics Concepts" and "Mathematics Computation" when tests involved the Mathematics Student Populations.

The null hypotheses formed in order to test the relationships examined were:

\[ H_{01} \] There is no correlation between scores produced by students on the SPTE\(_1\) and scores produced by the same students on the SPTE\(_2\).

\[ H_{02} \] There is no correlation between scores produced by students on the SPTE\(_2\) and their ERB scores when the influence of learning level is removed.

\[ H_{03} \] There is no correlation between scores of students on the SPTE\(_2\) form and their ERB scores at each of several defined learning levels.

The null hypothesis formulated to test the reliability of the teacher effectiveness form was rejected at a high level of confidence. The Student Perception of Teacher Effectiveness form was considered a reliable measuring instrument at all three levels examined.

Data collected to test hypothesis \( H_{02} \), the partial correlation hypothesis, required that the null hypothesis be accepted. There
was no significant correlation between scores produced by students on the SPTE\textsubscript{2} form and their ERB scores when the influence of learning level was removed.

Data collected to test hypothesis H\textsubscript{03} required that the null hypothesis be rejected in a high percentage of tests involving the eighth and twelfth grade English student populations and the eighth, eleventh and twelfth grade mathematics student populations.

Taking cognizance of the several limitations existing in this study, it was generally concluded that: (1) the Student Perception of Teacher Effectiveness form (SPTE form) is a reliable measuring instrument; (2) when used at the eighth and twelfth grade levels by English teachers, scores on the SPTE\textsubscript{2} form can be expected to correlate positively with achievement; (3) when used by mathematics teachers at the eighth grade level, scores on the SPTE form can be expected to correlate positively with achievement; and (4) when used by mathematics teachers at the eleventh and twelfth grade levels, scores on the SPTE\textsubscript{2} form can be expected to correlate negatively with achievement.

It was observed that the homogeneous advanced nature of the eleventh and twelfth grade mathematics student populations might explain the negative significant results of tests involving these student populations.
Chapter 1

INTRODUCTION

A considerable amount of research has recently been directed toward determining teacher effectiveness. Flanders (1969) defined teacher effectiveness as an area of research which is concerned with relationships between the characteristics of teachers, teaching acts, and their effects on the educational outcome of classroom teaching.

Many opinions about effective teaching have been elicited by surveying various groups of administrators, teachers and students. Mitzel (1960) identified three types of measures which previous investigators have used in researching teacher effectiveness. Mitzel believed these categories clarified the status of various criterion measures. The categories were labeled as product, process and presage.

"Presage criteria" is the term used to denote teacher evaluation based upon such things as teacher personality attributes, characteristics of teachers in training, teacher knowledge and achievement, and in-service teacher status characteristics. Mitzel labeled these criteria as "pseudo criteria" and states that "precedent forces their consideration as criteria, since the bulk of research on teacher competence has employed dependent variables which fit
into this category."

Process criteria are used to judge teachers upon classroom behavior (either the teacher's behavior, the student's behavior or the interplay of teacher/student behavior).

Product criteria are used to evaluate teachers by their effectiveness in changing student behavior. Examples given by Mitzel of product criteria were reading ability and other tasks which are readily measurable. Rabinowitz and Travers (1953), Ryans (1949, 1953a, 1953b) and Remmer's Committee on Criteria of Teacher Effectiveness (1953) are other sources wherein arguments are presented for assessing teacher competency in light of effects on students.

Studies concerning teacher effectiveness are confounded by the fact that there are a variety of opinions concerning the goals toward which an effective teacher should strive in our pluralistic society. Both Cureton (1951) and Ebel (1955) have indicated that schools should be practical and limit their self-evaluation efforts to the accomplishment of goals which are immediate and measurable.

Jenkins and Bausell (1974) recommended that "For gains in knowledge of subject matter one might use such measures as standardized achievement tests..." Mitzel (1960) suggested that product criteria should consist primarily of "measures of the goal-oriented effects of teachers (and schools) on children, obtained immediately after the periods in which children attend the schools."

The researcher is then referred by Mitzel to Bloom "to get an
idea of the variety of criteria possible" even under the above restrictions.

Bloom (1956) divides the cognitive domain into six major categories for the facilitation of the formation of educational objectives. The first level in the cognitive domain of Bloom's Taxonomy is knowledge. Smith and Adams (1972) explain that "The behavior involved here is primarily that of remembering and being able to recall information."

Effective teachers, administrators and supervisors are concerned with the transmission of knowledge as it is a legitimate and measurable product criterion. This study relates this major product criterion to student perception of teacher effectiveness in the fields of mathematics and English.

PURPOSE OF THE STUDY

The main objective of this work was to examine the relationships existing between student achievement on standardized achievement tests in the fields of mathematics and English and student perception of teacher effectiveness at various middle and secondary school levels.

The study was designed to answer the following questions:

1. What is the relationship between student achievement on a standardized "Mathematics Basic Concepts" test and student perception of teacher effectiveness?

2. What is the relationship between student achievement
on a standardized "Mathematics Computation" test and student perception of teacher effectiveness?

3. What is the relationship between student achievement on a standardized "Mechanics of Writing" test and student perception of teacher effectiveness?

4. What is the relationship between student achievement on a standardized "Reading" test and student perception of teacher effectiveness?

5. What is the relationship between student achievement on a standardized "English Expression" test and student perception of teacher effectiveness?

HYPOTHESIS

The following general null hypothesis was developed to test the relationships existing between student perception of teacher effectiveness and scores received by students on certain nationally standardized achievement tests:

\[ H_0 \]: There is no relationship between scores produced by students on the Student Perception of Teacher Effectiveness Form and their scores on certain nationally standardized achievement tests.
DEFINITION OF TERMS

The following terms are defined for the purpose of this study:

1. Achievement Tests:
   A. Mathematics Basic Concepts tests measure the elementary mathematical concepts, abilities, and skills that should be a part of the general mathematics education of all students;
   B. Mathematics Computation tests measure a wide variety of computational skills, including fundamental operations with integers, fractions, decimals, and percent; estimation; evaluation of formulas; solution of simple inequalities; and manipulations with exponents;
   C. Reading tests measure the ability to read and understand a variety of materials;
   D. Mechanics of Writing tests evaluate the mastery of the fundamental composition skills of spelling, capitalization and punctuation;
   E. English Expression tests assess the ability to evaluate the correctness and effectiveness
of sentences.

2. Teacher Effectiveness:

Teacher Effectiveness is defined as an area of research which is concerned with relationships between the characteristics of teachers, teaching acts and their effects on the educational outcomes of classroom teaching.

DELIMITATIONS

The delimitations of the study are:

1. The population of this study is limited to a certain population of students enrolled in a selected middle and secondary school in Baton Rouge, Louisiana.

2. The study is limited by the reliability and validity of the measuring instruments employed.

PROCEDURES

The study included the following procedures:

1. A summary of the proposed study and a copy of the student evaluation of teacher performance form administered in this study were submitted and accepted by the Louisiana State University
Committee on Use of Humans and Animals as Research Subjects.

2. Concerning the securing of standardized achievement data, converted scores were secured for each student representing his achievement on the relevant sections of the Educational Records Bureau Comprehensive Testing Program, Achievement Section, Form A, levels 4 and 5.

3. In order to secure student perception of teacher effectiveness scores, an instrument was developed which took into consideration the school philosophy and general objectives of the subject school. This instrument is fully described in Chapter Three, and a copy is appended to this work.

4. The Pearson product-moment coefficient of correlation formula was employed to determine the relationship between the student perception of teacher performance and the standardized achievement test scores for all students included in this study (Ostle, 1956; Garrett, 1967; and Van Dalen, 1973).
IMPORTANCE OF THE STUDY

It appears from the works cited in this introduction that:

1. Knowledge is a product criterion to be considered in overall teacher evaluation;
2. Prior studies relating student growth to teacher evaluation are conflicting;
3. Relatively few studies relating student achievement and student perceptions of teacher effectiveness have been done at the secondary school level.

The main value of this study is in the field of administration and supervision. The study is designed to elucidate the relationships that exist between student perception of teacher effectiveness and student achievement on various standardized tests. These are two important sources of data which are of annual concern to many school administrators and supervisors. The collection of this data is costly, time-consuming and usually causes various levels of anxiety on the part of teachers and students alike. Therefore, any new information as to their possible meaningfulness and relationships is of value to the administrator and supervisor.

Information gained from student evaluations is usually tabulated in some way in order to give the administrator and supervisor an overall impression of student perception of teacher effectiveness with regard to each teacher. Achievement scores are not so tabulated.
It would be helpful to administrators and supervisors to know if any significant relationships exist between the two sets of data.

This new insight gained by administrators and supervisors about an important product criterion in teacher evaluation may then be combined with other product, process and presage criteria for use by them in the overall evaluation of teacher effectiveness.
Chapter 2

REVIEW OF THE LITERATURE

A discussion of the classification of the criteria traditionally used for teacher evaluation was presented in Chapter One of this study in order to justify the use of product criteria as variables.

This chapter will include a discussion of survey studies using achievement as a criterion, studies producing conflicting results, studies similar to this work and a summarization.

SURVEY STUDIES USING ACHIEVEMENT AS A CRITERION

In 1974 Jenkins and Bausell developed a survey instrument based on an assortment of Mitzel 's criteria in a study designed to elucidate how both teachers and administrators view the criteria upon which teachers are frequently evaluated. The survey was administered to a random sample of public school administrators and teachers in Delaware. The authors were most interested in the ranking given the criterion "Amount his students learn" (eleventh of sixteen choices), and offered fully a half dozen possible explanations for it. Most of the explanations placed the teacher in a hypothetically defensive stance.

Gurney (1977) used a slightly modified version of the Jenkins
and Bausell criteria in a later study. Gurney was interested in how students might perceive a set of criteria including items often found on teacher evaluations. His survey included a group of students from the College of Education at Florida Technological University, a group of students who were non-education majors and included every other college in the university and a group of professional educators.

The results showed that both of the student groups ranked the importance of "the amount his/her students learn" above the ranking given this criterion by the educators and above most other criteria. Gurney called attention to the fact that students perceive teacher effectiveness in a different manner than do educators.

STUDIES PRODUCING CONFLICTING RESULTS

Research regarding the relationships existing between student achievement and student perception of teacher effectiveness is recent and expanding. Mitzel and Gross (1956) found only twenty studies which used student-growth criteria to measure teacher effectiveness in elementary or secondary schools.

Palmer, Carliner and Romer (1977) cite six recent studies documenting a positive relationship between grades received by students and evaluations which these students gave their instructors. They describe these results, among other things, as "consistent with the view that instructors 'buy' high evaluations (and, they hope,
higher pay, promotion, and tenure) by 'giving' the students higher grades." Conversely, Doyle (1974) feels the causation may be in the opposite direction from that usually assumed and "... an instructor may grade a class harshly or generously because of the ratings he receives (or anticipates)."

Other studies, well summarized by Costin, Greenough and Menges (1971) have found no relationship between grades and evaluations.

The 1977 Palmer study differentiates between grades and "amount learned" and under the heading of "Evaluations and Amount Learned" discusses an inconclusive study by Capozza (1973) which attempted to measure the relationship between learning and student evaluations of instructor effectiveness.

Crowley and Wilton (1974) found a positive but insignificant relationship between some components of evaluations and the amount students learned in beginning economics. Significant and positive relationships between some components of evaluations and achievement have been reported by Gessner (1973), Frey, Leonard and Beatty (1975), and Doyle and Whitely (1974).

Some research studies have uncovered possible negative aspects of the use of student evaluation of instructors. One such study concluded that the use of responses to teacher evaluation forms in making decisions is ill-advised. Morrow (1977) in his research found that reliability estimates support the use of teacher evaluation forms, while validity coefficients do not.
Eastridge (1976) recently reviewed much of the research directed toward determining whether evaluation of teachers by students can be effective. He concluded that student evaluation may serve as a valuable adjunct to improving instruction.

More recently Marsh (1979) examined the relationships existing between class size, students' evaluations and instructional effectiveness in two different university settings. The magnitude of the class-size effect was found to depend upon the specific component of the evaluation being considered. For instance, the effect was large for "Quality of Group Interaction," but was small for ten other components including "Overall Course" and "Overall Instructor" ratings. Faculty self-evaluations were also conducted at one of the universities. Relationships between class size and different components of faculty self-evaluations were generally similar to those found with students' evaluations. Marsh felt that his findings challenged the widely held speculation that effectiveness of instruction necessarily suffers in classes with large enrollments.

Derry (1979) addressed the question "Can ratings of instruction serve rival purposes?" The two rival purposes are described as summative (designed to produce stable rankings of teachers) and formative (designed to produce ratings capable of signaling the need for improvement). Derry concluded that summatively designed evaluations can produce stable rankings of teachers but that the ratings reflect student's satisfaction with the process of instruction, and should not be used as surrogate measures of student
achievement which is a product of instruction. Derry felt the need to understand the formative uses of students' ratings far outweigh the need to build increasingly precise summative measures.

SIMILAR STUDIES

Two recent studies are very similar in nature and learning level to the work presented in this dissertation.

Masters (1977) undertook to examine the reliability and validity of a student-designed instrument developed to provide feedback to high school teachers on student perception of teacher performance. The questionnaire, developed by a board of eleventh- and twelfth-grade Pennsylvania students, contains twenty-nine positive statements concerning a teacher's classroom behavior, with a five-point scale provided for student responses. The statements are arranged in five subsets: Student-Teacher Relations, Grades and Testing, Materials, Teacher Personality, and Teaching Methods and Techniques. Three final questions investigate distracting personal mannerisms; reasons for taking the course; and feelings about recommending the course to others. Testing of the instrument was performed with a group of thirty-six teachers and 925 students divided into three treatment groups. Analyses of student responses and comparison of these analyses with previous research on teacher rating by students suggests that the questionnaire is highly useful. Students seemed capable of making and repeating stable ratings over
a period of time among the items. The subscales of the instrument were generally internally consistent. The major problem uncovered was that students of differing achievement levels tended to rate teachers differently, with the more successful students giving higher ratings, and those who were "turned off" to school giving lower ratings. The major conclusion of the study was that, while the questionnaire should not be used to evaluate or compare high school teachers, it is a valuable instrument for teachers to use in their own classrooms.

Smith and Brown (1977) sought to explore the relationships among general attitude toward school, evaluative ratings of courses and instructors, and selected respondent characteristics. An attitude inventory, and a course and instructor rating scale for each class were administered to 436 students in grades seven through twelve. The study concluded that significant correlations suggest the need to adjust teacher rating results to account for student attitude, opinions about course difficulty and other dispositional variables.

SUMMARY

While the reliability of the instruments used in the studies reviewed was generally high, consistent significant correlation between student achievement and student perception of teacher performance has not been demonstrated, and no clear trend emerges
from a review of the literature in this area.

The conflicting results may be explained in part by the diverse experimental conditions involved in these studies. Some of the important experimental conditions which vary are: educational level of the students, area of achievement measured, length of period of instruction and the circumstances under which the student evaluations were completed.
Chapter 3

PROCEDURES

This chapter will be divided into the following sections: (1) research design; (2) selection of population; (3) preliminary steps; (4) implementation of Student Perception of Teacher Effectiveness form; (5) implementation of the student achievement testing program; and (6) statistical methods.

RESEARCH DESIGN

This study was designed to examine the relationships existing between student perception of teacher effectiveness and student achievement on standardized tests in mathematics and English.

Converted scores were obtained for each student representing his achievement on relevant sections of the Educational Records Bureau Comprehensive Testing Program, Achievement Section, Form A, levels 4 and 5 (ERB, Appendix A, B).

Level four was administered to students in grades seven, eight, and nine. Level five was administered to grades ten, eleven, and twelve. Raw scores for all tests within a subject area were converted to a single score scale across levels and test forms. It was possible, therefore, to compare a student's performance with
that of students who had taken different levels or forms of the same test.

In order to determine student perception of teacher effectiveness, an instrument was developed as follows: (1) the philosophy and general educational objectives of the subject school were considered in the formulation of the individual items; (2) wording in some items followed the style used by Veldman (1967) and by Denton (1977); (3) written instructions to the students and the use of ten blanks to be blocked in was suggested by The Purdue Rating Scale described by H. H. Remmers (1963); (4) the items were grouped into common "factors" created for purposes of analysis as described by Remmers and Gage (1955) and Veldman (1967).

The six factors selected for use in this instrument were designed to measure the student's evaluation of the teacher's probing style of teaching, methodology in presentation, encouragement of independent thinking, knowledge and poise, friendliness and concern, and other general considerations. Each factor consisted of four items.

The reliability of the student evaluation form was established by means of a correlation analysis performed on the results of two separate administrations of the Student Perception of Teacher Effectiveness form.

The second major segment of this study involved a series of partial correlation tests designed to examine the relationship between student perception of teacher effectiveness as determined by the second administration of the Student Perception of Teacher
Effectiveness form (SPTE₂) and student achievement in mathematics and English, as determined by defined sections of the ERB tests, with the influence of the variable learning level removed.

The third major segment of this study involved a series of correlation tests designed to examine the relationship between student perception of teacher effectiveness as determined by the SPTE₂ forms, and student achievement in mathematics and English, as determined by the ERB tests at specific learning levels.

SELECTION OF POPULATIONS

The members of the populations involved in this study attend a certain independent school in Baton Rouge, Louisiana. The school is state accredited and is a member of the Independent Schools Association of the Southwest. The major divisions of the school are: Lower Middle School (Grades 5-6); Upper Middle School (Grades 7-8); and Upper School (Grades 9-12).

PRELIMINARY STEPS

This study was described in detail to the Headmaster of the subject school and his permission was obtained to proceed. The research was described to the Heads of the departments immediately involved, and their cooperation was assured. A meeting was then called wherein the research plan was explained to all the teachers involved. Their consent was secured and a date was set for the
giving of the first student evaluation.

The preliminary steps also included the submission of a summary of the proposed study to the Louisiana State University Committee on Use of Humans and Animals as Research Subjects. The students and teachers were given assurances of their options, rights and protection.

IMPLEMENTATION OF STUDENT PERCEPTION OF TEACHER EFFECTIVENESS FORM

The implementation of the student evaluations occurred on the appointed dates during the second semester of the 1977-1978 school year. The same student evaluation was administered to each student surveyed on two separate dates. The first evaluation was completed on January 23, 1978, and the second evaluation was completed on March 31, 1978, shortly before the administration of the standardized ERB tests.

IMPLEMENTATION OF STUDENT ACHIEVEMENT TESTING PROGRAM

The implementation of the student testing program occurred on April 13 and 14, 1978. Results were obtained in June of 1978.

STATISTICAL METHODS

A series of correlation tests were performed to determine the
reliability of the Student Perception of Teacher Effectiveness form.

A series of partial correlation tests were performed to determine the relationship between student perception of teacher effectiveness (SPTE<sub>2</sub> scores) and student achievement in mathematics and English (ERB scores), with the influence of the variable learning level removed.

A series of correlation tests were performed to examine the relationship between student perception of teacher effectiveness (SPTE<sub>2</sub> scores) and student achievement in mathematics and English (ERB scores) at specific learning levels.

All of these procedures will be described in detail in Chapter Four.
Chapter 4

PRESENTATION AND ANALYSIS OF DATA

The data analyzed in this chapter include: (1) the scores of students on the Student Perception of Teacher Effectiveness form completed in January of 1978 (SPTE$_1$); (2) the scores of students on the Student Perception of Teacher Effectiveness form completed in March of 1978 (SPTE$_2$); (3) the standardized test scores of students who took the Educational Records Bureau test, Form A, levels 4 or 5 (ERB scores); (4) the correlation of scores given by students on the SPTE$_1$ form to the scores given by them on the SPTE$_2$ form; (5) the partial correlation of the SPTE$_2$ scores to the appropriate ERB scores in English and in mathematics for all learning levels combined; (6) the correlation of the SPTE$_2$ scores to the appropriate ERB scores in English and in mathematics at each of several defined learning levels.

STUDENT PERCEPTION OF TEACHER EFFECTIVENESS DATA

The form used to determine student perception of teacher effectiveness was designed as described in Chapter Three. A copy of the form is included in the Appendix.

Data from this form were evaluated by item, by factor and by
a mean value for the entire form. Table 1 presents a list of the six factors considered, together with the items from the form which comprise each factor. The number to the left of each item represents the placement of the item in the actual form. The letter to the right of each item represents the response sought.

Students responded to each of the twenty-four items by darkening in one of the appropriate spaces provided in the instrument above the comments "Strongly Agree," "Mildly Agree," "Mildly Disagree" and "Strongly Disagree." There were a total of ten spaces evenly distributed above these phrases. The maximum score for each item was nine; the minimum score for each item was zero. The lower scores indicated lower degrees of student perception of effectiveness of teacher performance while the higher scores indicated a higher degree of satisfaction. Since "Strongly Agree" and "Strongly Disagree" were at various times the desired response, zero was not always to the left on the page.

Reliability of the Student Evaluation of Teacher Effectiveness Form

The results of the first and second administration of the Student Perception of Teacher Effectiveness forms were scored. Determining the reliability of the Student Perception of Teacher Effectiveness form involved examining the relationship between the variable "student perception of teacher effectiveness as measured by the SPTE$_1$" and the variable "student perception of teacher effectiveness as measured by the SPTE$_2$." This method of determining
Table 1

Student Evaluation of Teacher Effectiveness Form
Arranged by Factor

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
<th>Response Sought</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1: Probing Style of Teaching</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>We often discuss the kind of evidence that is behind the &quot;truths&quot; presented in this course</td>
<td>Agree</td>
</tr>
<tr>
<td>13</td>
<td>When reading the textbook we are expected to look for the main ideas and for the evidence that supports and describes them</td>
<td>Agree</td>
</tr>
<tr>
<td>19</td>
<td>My teacher discourages differing viewpoints on issues we discuss</td>
<td>Disagree</td>
</tr>
<tr>
<td>7</td>
<td>We do not read subject-related material in books and periodicals outside of class</td>
<td>Disagree</td>
</tr>
<tr>
<td></td>
<td>Factor 2: Methodology in Presentation</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>My teacher uses films, filmstrips and/or transparencies which are helpful aids to understanding the textbook</td>
<td>Agree</td>
</tr>
<tr>
<td>14</td>
<td>Some type of audio-visual equipment or demonstration is used in this class at least once a week</td>
<td>Agree</td>
</tr>
<tr>
<td>20</td>
<td>My teacher knows how to put the subject across in a lively way</td>
<td>Agree</td>
</tr>
<tr>
<td>2</td>
<td>My teacher lets the class discussions get too far off the subject</td>
<td>Disagree</td>
</tr>
<tr>
<td>Item</td>
<td>Factor</td>
<td>Response Sought</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td>3</td>
<td>Factor 3: Encourages Independent Thinking</td>
<td>Agree</td>
</tr>
<tr>
<td>9</td>
<td>I often feel that my teacher is not interested in my answer to a question</td>
<td>Disagree</td>
</tr>
<tr>
<td>15</td>
<td>My teacher frequently encourages student contributions during class</td>
<td>Agree</td>
</tr>
<tr>
<td>21</td>
<td>I do not like to answer discussion questions in class because of my teacher's possible negative response if my answer is incorrect.</td>
<td>Disagree</td>
</tr>
<tr>
<td>4</td>
<td>Factor 4: Knowledgeable and Poised</td>
<td>Agree</td>
</tr>
<tr>
<td>10</td>
<td>My teacher does not admit his mistakes</td>
<td>Disagree</td>
</tr>
<tr>
<td>16</td>
<td>My teacher knows a good deal about his subject</td>
<td>Agree</td>
</tr>
<tr>
<td>22</td>
<td>My teacher usually gets confused by unexpected questions</td>
<td>Disagree</td>
</tr>
<tr>
<td>5</td>
<td>Factor 5: Friendly, Concerned</td>
<td>Disagree</td>
</tr>
<tr>
<td>5</td>
<td>My teacher is hard to reach for outside help and guidance</td>
<td>Disagree</td>
</tr>
<tr>
<td>Item</td>
<td>Factor</td>
<td>Response Sought</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>-----------------</td>
</tr>
<tr>
<td>11</td>
<td>My teacher is warm and friendly toward his students</td>
<td>Agree</td>
</tr>
<tr>
<td>17</td>
<td>My teacher is not concerned about whether the students learn the material</td>
<td>Disagree</td>
</tr>
<tr>
<td>23</td>
<td>My teacher rarely seems to order the students around</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td><strong>Factor 6: General: Model, Consistent, Prompt</strong></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>My teacher is admired by most of his students</td>
<td>Agree</td>
</tr>
<tr>
<td>12</td>
<td>My teacher sets a good example for the students</td>
<td>Agree</td>
</tr>
<tr>
<td>18</td>
<td>My teacher is fair in testing and grading</td>
<td>Agree</td>
</tr>
<tr>
<td>24</td>
<td>My teacher rarely goes over a test the day after grading it</td>
<td>Disagree</td>
</tr>
</tbody>
</table>
the reliability of a measuring instrument is commonly described as
the "test-retest" method.

Smith and Adams (1972) explain that:

"The greater the degree of correlation
between the two sets of scores thus obtained,
the greater is the reliability of the test.
If the correlation coefficient is high, we
are willing to rely on the test as a fairly
accurate indication of the thing measured."

The null hypothesis formed in order to test the relationship
described above follows:

\[ H_{01}. \text{ There is no correlation between the} \]
\[ \text{scores produced by students on the} \]
\[ \text{SPTE}_1 \text{ and scores produced by the} \]
\[ \text{same students on the SPTE}_2. \]

This null hypothesis is derived from the fact that if the two
sets of results were statistically independent, the correlation
between them would be zero (Ostle, 1956).

The product-moment correlation coefficient (r) was computed
for each relationship examined. A general guideline for the
interpretation of r as an indication of the magnitude of the rela-
tionship that exists between variables in educational research is
presented by Van Dalen (1973), and follows:

\[ r = ^+ .00 \text{ to } ^+ .20, \text{ negligible relationship} \]
\[ r = ^+ .20 \text{ to } ^+ .40, \text{ low relationship} \]
\[ r = ^+ .40 \text{ to } ^+ .70, \text{ marked relationship} \]
\[ r = ^+ .70 \text{ to } ^+ 1.00, \text{ high to very high relationship} \]
The reliability of the Student Perception of Teacher Effectiveness form was tested at three levels: (1) the reliability of the form was tested by correlating each student's mean SPTE₁ score with his mean SPTE₂ score; (2) the reliability of the form at the factor level was tested by correlating each student's six SPTE₁ factor responses, (the mean of the four appropriate item responses) with his comparable SPTE₂ factor responses; (3) the reliability of every item was tested by correlating each student's SPTE₁ and SPTE₂ item responses.

The populations used in this particular aspect of the study included: (1) all English students in grades seven through twelve, with the exclusion of students enrolled in six-month English elective courses (English Student Population); (2) all mathematics students in grades seven through twelve, with the exclusion of students enrolled in six-month mathematics elective courses (Mathematics Student Population); and (3) all the students in the populations described above (Combined Population).

Reliability of the Entire Form

The results of the reliability test of the Student Perception of Teacher Effectiveness form are presented in Table 2. "N" in Table 2 and in all Tables in this study is used to denote population size.

The reliability of the Student Perception of Teacher Effectiveness form was found to be entirely satisfactory. There was a marked
correlation between the two variables involving the English student population, and a high correlation between the two variables involving the other two populations. All three coefficients of correlation computed were significant at the .0001 level.

Table 2

Student Perception of Teacher Effectiveness
Form Test of Reliability

<table>
<thead>
<tr>
<th>Population</th>
<th>N</th>
<th>SPTE₁ Mean Score</th>
<th>SPTE₂ Mean Score</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>345</td>
<td>5.4</td>
<td>5.7</td>
<td>.58*</td>
</tr>
<tr>
<td>Mathematics</td>
<td>335</td>
<td>5.8</td>
<td>5.8</td>
<td>.72*</td>
</tr>
<tr>
<td>English and Mathematics</td>
<td>610</td>
<td>5.6</td>
<td>5.7</td>
<td>.70*</td>
</tr>
</tbody>
</table>

*Significant at the .0001 level.

The null hypothesis formulated for the purpose of testing the reliability of the teacher effectiveness form was rejected at a high level of confidence in each of the three tests performed. The rejection of the null hypothesis at the .0001 significance level indicates with a high degree of certainty that a correlation exists between SPTE₁ and SPTE₂. Therefore, the Student Perception of
Teacher Effectiveness form can be considered a reliable measuring instrument.

Reliability at the Factor Level

The reliability of the Student Perception of Teacher Effectiveness form was tested in the same manner as described above at the factor level, using the English Student Population and the Mathematics Student Population.

The results of the reliability tests at the factor level are presented in Table 3 for the English Student Population and in Table 4 for the population of mathematics students.

Table 3

Student Perception of Teacher Effectiveness Form
Test of Reliability at the Factor Level:
English Student Population

<table>
<thead>
<tr>
<th>Factor</th>
<th>N</th>
<th>Mean Score SPTE₁</th>
<th>Mean Score SPTE₂</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>329</td>
<td>6.1</td>
<td>6.4</td>
<td>.44*</td>
</tr>
<tr>
<td>2</td>
<td>337</td>
<td>4.3</td>
<td>4.5</td>
<td>.71*</td>
</tr>
<tr>
<td>3</td>
<td>337</td>
<td>5.7</td>
<td>5.7</td>
<td>.59*</td>
</tr>
<tr>
<td>4</td>
<td>333</td>
<td>5.0</td>
<td>6.7</td>
<td>.59*</td>
</tr>
<tr>
<td>5</td>
<td>340</td>
<td>6.2</td>
<td>5.9</td>
<td>.52*</td>
</tr>
<tr>
<td>6</td>
<td>336</td>
<td>5.8</td>
<td>5.5</td>
<td>.62*</td>
</tr>
</tbody>
</table>

*Significant at the .0001 level.
The null hypothesis formed in order to examine the relationship between comparable factor scores on the two administrations of the teacher evaluation form follows:

\( H_{02} \). There is no correlation between factor scores produced by students on the SPTE\(_1\) and comparable factor scores produced by the same students on the SPTE\(_2\).

Table 4

Student Perception of Teacher Effectiveness Form
Test of Reliability at the Factor Level:
Mathematics Student Population

<table>
<thead>
<tr>
<th>Factor</th>
<th>N</th>
<th>Mean Score SPTE(_1)</th>
<th>Mean Score SPTE(_2)</th>
<th>( r )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>297</td>
<td>4.9</td>
<td>4.7</td>
<td>.46*</td>
</tr>
<tr>
<td>2</td>
<td>330</td>
<td>6.2</td>
<td>6.1</td>
<td>.62*</td>
</tr>
<tr>
<td>3</td>
<td>323</td>
<td>5.3</td>
<td>5.3</td>
<td>.65*</td>
</tr>
<tr>
<td>4</td>
<td>334</td>
<td>6.9</td>
<td>6.8</td>
<td>.65*</td>
</tr>
<tr>
<td>5</td>
<td>330</td>
<td>6.0</td>
<td>5.8</td>
<td>.71*</td>
</tr>
<tr>
<td>6</td>
<td>331</td>
<td>6.5</td>
<td>6.3</td>
<td>.73*</td>
</tr>
</tbody>
</table>

*Significant at the .0001 level.

The reliability of the Student Perception of Teacher Effective-
ness form was also found to be entirely satisfactory at each factor
level. Each coefficient of correlation determined was significant
at the .0001 level for every factor in both populations tested.

Tests involving the English Student Population resulted in a
marked correlation between the variables for five factors tested
and a high correlation for the Factor 2 test.

Tests involving the population of mathematics students produced
marked correlations between the variables for four factors tested,
and a high correlation between the variables for the tests involving
Factors 5 and 6. These factors are listed in Table 1, page 24.

The null hypothesis formed in order to test the reliability
of the teacher effectiveness form was rejected at a high level of
confidence in each of the twelve tests performed. The rejection
of the null hypothesis at the .0001 significance level indicates
with a high degree of certainty that a correlation exists between
SPTE\textsubscript{1} and SPTE\textsubscript{2} at the factor level. Therefore, the Student Per­
ception of Teacher Effectiveness form can be considered a reliable
measuring instrument at the factor level.

Reliability at the Item Level

The reliability of the Student Perception of Teacher Effec­
tiveness form was also tested at the item level using the English
Student Population and the Mathematics Student Population. Table 5
presents the results of the tests involving the English students;
Table 6 represents the results of the tests involving the mathem­
atics students.
The null hypothesis formed in order to examine the relationship between comparable item scores on the two administrations of the evaluation form follows:

\[ H_{03} \]: There is no correlation between item scores produced by students on the SPTE_1 and comparable item scores produced by the same students on the SPTE_2.

Data for the English Student Population presented in Table 5 can be summarized as follows: (1) the Item 4 test produced a negligible negative correlation; (2) the Item 8 test produced a positive high correlation; (3) tests involving Items 1, 7, 13, 17, 19 and 23 produced positive low correlations; (4) the remaining sixteen Items tested produced positive marked correlations.

Data for the Mathematics Student Population presented in Table 6 can be summarized in a like manner: (1) tests involving Items 7, 13, 19, 23 and 24 produced positive low correlations; (2) tests involving Items 6, 11 and 20 produced positive high correlations; (3) the remaining sixteen items tested produced positive marked correlations.

The lone negative correlation produced was not significant. The test involving Item 7 for the Mathematics Student Population was significant at the .001 level; the remaining forty-six tests produced positive correlations at the .0001 significance level.
Table 5

Student Perception of Teacher Effectiveness Form  
Test of Reliability at the Item Level:  
English Student Population

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Mean Score SPTE₁</th>
<th>Mean Score SPTE₂</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>340</td>
<td>6.1</td>
<td>6.4</td>
<td>.39*</td>
</tr>
<tr>
<td>2</td>
<td>345</td>
<td>5.7</td>
<td>5.7</td>
<td>.59*</td>
</tr>
<tr>
<td>3</td>
<td>345</td>
<td>4.5</td>
<td>4.4</td>
<td>.50</td>
</tr>
<tr>
<td>4</td>
<td>383</td>
<td>1.0</td>
<td>6.8</td>
<td>-.05</td>
</tr>
<tr>
<td>5</td>
<td>345</td>
<td>6.3</td>
<td>6.2</td>
<td>.40</td>
</tr>
<tr>
<td>6</td>
<td>344</td>
<td>5.4</td>
<td>5.0</td>
<td>.64</td>
</tr>
<tr>
<td>7</td>
<td>339</td>
<td>5.5</td>
<td>6.0</td>
<td>.31</td>
</tr>
<tr>
<td>8</td>
<td>346</td>
<td>3.8</td>
<td>4.3</td>
<td>.71</td>
</tr>
<tr>
<td>9</td>
<td>345</td>
<td>6.1</td>
<td>6.1</td>
<td>.47</td>
</tr>
<tr>
<td>10</td>
<td>344</td>
<td>6.4</td>
<td>6.3</td>
<td>.42</td>
</tr>
<tr>
<td>11</td>
<td>343</td>
<td>6.4</td>
<td>6.1</td>
<td>.60</td>
</tr>
<tr>
<td>12</td>
<td>342</td>
<td>6.3</td>
<td>6.0</td>
<td>.53</td>
</tr>
<tr>
<td>13</td>
<td>345</td>
<td>7.1</td>
<td>7.2</td>
<td>.31</td>
</tr>
<tr>
<td>14</td>
<td>341</td>
<td>2.3</td>
<td>2.5</td>
<td>.47</td>
</tr>
<tr>
<td>15</td>
<td>342</td>
<td>6.1</td>
<td>6.1</td>
<td>.43</td>
</tr>
<tr>
<td>16</td>
<td>337</td>
<td>7.6</td>
<td>7.7</td>
<td>.48</td>
</tr>
<tr>
<td>17</td>
<td>345</td>
<td>6.7</td>
<td>6.5</td>
<td>.32</td>
</tr>
<tr>
<td>18</td>
<td>342</td>
<td>6.3</td>
<td>6.2</td>
<td>.50</td>
</tr>
<tr>
<td>19</td>
<td>341</td>
<td>5.9</td>
<td>6.0</td>
<td>.31</td>
</tr>
<tr>
<td>20</td>
<td>342</td>
<td>5.5</td>
<td>5.4</td>
<td>.65</td>
</tr>
<tr>
<td>21</td>
<td>344</td>
<td>6.1</td>
<td>6.1</td>
<td>.50</td>
</tr>
<tr>
<td>22</td>
<td>343</td>
<td>6.1</td>
<td>6.1</td>
<td>.41</td>
</tr>
<tr>
<td>23</td>
<td>343</td>
<td>5.2</td>
<td>4.8</td>
<td>.23</td>
</tr>
<tr>
<td>24</td>
<td>344</td>
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<td>4.7</td>
<td>.41</td>
</tr>
</tbody>
</table>

*Significant at the .0001 level.
**Table 6**

**Student Perception of Teacher Effectiveness Form**  
**Test of Reliability at the Item Level:**  
**Mathematics Student Population**

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Mean Score SPTE&lt;sub&gt;1&lt;/sub&gt;</th>
<th>Mean Score SPTE&lt;sub&gt;2&lt;/sub&gt;</th>
<th>r</th>
</tr>
</thead>
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<td>.44**</td>
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<td>6.9</td>
<td>.53**</td>
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<td>3</td>
<td>337</td>
<td>3.0</td>
<td>3.2</td>
<td>.41**</td>
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<td>6.9</td>
<td>.65**</td>
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<td>.50**</td>
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<td>2.7</td>
<td>.20*</td>
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<td>.51**</td>
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<td>.49**</td>
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<td>.35**</td>
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<td>335</td>
<td>7.2</td>
<td>7.0</td>
<td>.24**</td>
</tr>
</tbody>
</table>

*Significant at the .001 level.  
**Significant at the .0001 level.
The null hypothesis formed in order to test the reliability of the teacher effectiveness form at the item level was rejected at a high level of confidence in forty-seven of the forty-eight tests performed. The rejection of the null hypothesis at the .001 level in one test and at the .0001 level in forty-six tests indicates with a high degree of certainty that a correlation exists between the SPTE\textsubscript{1} and SPTE\textsubscript{2} at the item level, with the exception of Item 4 involving the English Student Population. Therefore, the Student Perception of Teacher Effectiveness form can be considered a reliable measuring instrument at the item level.

**PARTIAL CORRELATION DATA**

The second major segment of this study involves a series of partial correlation tests designed to examine the relationship between student perception of teacher effectiveness as determined by the SPTE\textsubscript{2} forms, and student achievement in mathematics and English, as determined by the ERB\textsubscript{4} and ERB\textsubscript{5} standardized achievement tests, with the influence of the variable learning level removed.

The variables in these tests are defined as follows: (1) the dependent variables are SPTE\textsubscript{2} scores; (2) the independent variables are the ERB scores; (3) the variable being "partialed out" is the learning level of the members of the populations.

Learning level is defined as grade level for the purpose of these tests. In the English Student Population, grade level is
equivalent to course level, since all English students in a particular grade are enrolled in the same English course. However, in the Mathematics Student Population, course level is not equivalent to grade level, since students of different grade levels are often enrolled in the same mathematics course.

The populations used in this segment of the study are the same English Student Population and Mathematics Student Population used to examine the reliability of the SPTE form.

Data representing the SPTE variables are provided, as they were in the reliability tests, by item, by factor and by a mean value for the entire form.

Data representing the achievement score variables are provided as follows: (1) for the English Student Population, ERB scores are defined as achievement in the areas of reading, mechanics of writing and expression; (2) for the Mathematics Student Population, ERB scores are defined as achievement in mastery of mathematics concepts and mathematics computation.

The null hypothesis used to examine the relationship between SPTE scores and ERB scores with the influence of learning level removed follows:

\[ H_{04} \text{. There is no correlation between scores produced by students on the SPTE and their ERB scores when the influence of learning level is removed.} \]
The results of these partial correlation tests are presented in Tables 7 and 8 for the English Student Population and in Tables 9 and 10 for the population of mathematics students.

Tables 7 and 9 present the results of the correlations at the entire form and factor level. Tables 8 and 10 present the results of the tests performed at the item level. The data resulting from the partial correlation tests may be easily summarized.

The data from the tests involving the English Student Population reveal no significant correlations when the dependent variable is the mean value for the entire SPTE$_2$ form. There are also no significant correlations at the factor level. Only two of the item-level tests reveal correlations significant at the .05 level, and these results are conflicting. The Item 6 test resulted in a negligible negative correlation when the independent variable was "Reading," while the Item 8 test resulted in a negligible positive correlation when the independent variable was "Expression."

The data from the tests involving the Mathematics Student Population also reveal no significant correlations when the dependent variable is the mean value for the entire SPTE$_2$ form. Again, there are no significant correlations at the factor level. Only one of the item-level tests reveals a correlation significant at the .05 level; the Item 5 test resulted in a negligible positive correlation when the independent variable was "Mathematics Concepts."
Table 7

Partial Correlation Study with Influence of Learning Level Removed.
SPTE$_2$ Scores Correlated with ERB Scores at Form and
Factor Level: English Student Population

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Independent Variables, r</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
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<tr>
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<tr>
<td></td>
<td>6</td>
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</tbody>
</table>

df = 344
Table 8

Partial Correlation Study with Influence of Learning Level Removed. SPTE2 Scores Correlated with ERB Scores at Item Level:
English Student Population

<table>
<thead>
<tr>
<th>Dependent Variables</th>
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<th>Mechanics of Writing</th>
<th>Expression</th>
</tr>
</thead>
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<td>.07</td>
<td>.05</td>
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<tr>
<td>Item 3</td>
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<td>-.02</td>
<td>.01</td>
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<td>-.07</td>
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<td>.08</td>
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<td>-.00</td>
<td>-.01</td>
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<td>-.03</td>
<td>-.02</td>
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<td>-.02</td>
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<td>-.02</td>
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df = 344

*Significant at the .05 level.
Table 9

Partial Correlation Study with Influence of Learning Level Removed. SPTE₂ Scores Correlated with ERB Scores at Form and Factor Level. Mathematics Student Population

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<thead>
<tr>
<th>Dependent Variables</th>
<th>Independent Variables, r</th>
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</thead>
<tbody>
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<td>-0.02</td>
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<td>2</td>
<td>-0.04</td>
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<tr>
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</table>

df = 323
Table 10

Partial Correlation Study with Influence of Learning Level Removed.
SPTE₂ Scores Correlated with ERB Scores at Item Level.
Mathematics Student Population

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Independent Variables, ( r )</th>
<th>Mathematics Concepts</th>
<th>Mathematics Computation</th>
</tr>
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<td>.01</td>
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<td>-.02</td>
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<td>-.03</td>
<td>-.03</td>
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<td>.11</td>
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</table>

\( df = 323 \)

*Significant at the .05 level.
The data require that the null hypothesis be accepted. There is no correlation between scores produced by students on the SPTE and their ERB scores when the influence of learning level is removed.

CORRELATION DATA

The third segment of this study involves a series of correlation tests designed to examine the relationship between student perception of teacher effectiveness as determined by the SPTE forms, and student achievement in mathematics and English as determined by the ERB standardized achievement tests at each of several defined learning levels.

The variables in these tests are defined as follows: (1) the dependent variables are the SPTE scores; (2) the independent variables are the ERB scores.

The populations used in this segment of the study are the English Student Population and Mathematics Student Population at specific grade levels.

The six English student populations are: English 7, English 8, English I, English II, English III and English IV. These learning levels are analogous to grades seven through twelve, respectively.

The six mathematics student populations are: Math 7, Math 8, Math 9, Math 10, Math 11 and Math 12.
The variables in these tests are: (1) the SPTE$_2$ scores; (2) the ERB scores.

Data representing the SPTE$_2$ variables are presented as they were previously, by item, by factor and by a mean value for the entire form.

Data representing the achievement score variables are the same as those described in the Partial Correlation segment of this study.

The null hypothesis used to determine the relationship between SPTE$_2$ scores and ERB scores at the defined learning levels follows:

$H_0$. There is no correlation between scores of students on the SPTE$_2$ form and their ERB scores at each of several defined learning levels.

The results of these correlation tests are presented in Tables 11 through 16 for the English Student Population, and in Tables 17 through 22 for the Mathematics Student Population. Tables 23 and 24 summarize the significant data.

Each of the Tables 11 through 22 present the data for tests involving a specific factor and the items that comprise that factor at all learning levels. Data which resulted when the SPTE$_2$ form mean value was tested as a variable are also present in each table. This tabular arrangement facilitates the analysis of data involving the entire SPTE$_2$ form, each factor and the items that
Table 11
Correlation Study at Defined Learning Levels. SPTE\textsubscript{2} Scores Correlated with ERB Scores: Factor 1.
English Student Populations

<table>
<thead>
<tr>
<th>Learning Level</th>
<th>ERB Variable</th>
<th>SPTE\textsubscript{2} Variable, r</th>
<th>SPTE\textsubscript{2}</th>
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<td>Mechanics</td>
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<td>-.10</td>
</tr>
<tr>
<td></td>
<td>Expression</td>
<td>-.12</td>
<td>-.09</td>
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<tr>
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<td>.30**</td>
</tr>
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<td></td>
<td>Expression</td>
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<td>.39***</td>
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<tr>
<td></td>
<td>Expression</td>
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<td>.13</td>
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*Significant at .05 level.
**Significant at .01 level.
***Significant at .001 level.
****Significant at .0001 level.
Table 12
Correlation Study at Defined Learning Levels. SPTE₂ Scores Correlated with ERB Scores: Factor 2.
English Student Populations

<table>
<thead>
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<th>Learning Level</th>
<th>ERB Variable</th>
<th>SPTE₂ Variable, r</th>
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<td></td>
<td>Mechanics</td>
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*Significant at .05 level.
**Significant at .01 level.
Table 13

Correlation Study at Defined Learning Levels. SPTE\textsubscript{2} Scores Correlated with ERB Scores: Factor 3.

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*Significant at .05 level.
**Significant at .01 level.
***Significant at .001 level.
****Significant at .0001 level.
Table 14
Correlation Study at Defined Learning Levels. SPTE2 Scores Correlated with ERB Scores: Factor 4.
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*Significant at .05 level.
**Significant at .01 level.
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*Significant at .05 level.
**Significant at .01 level.
***Significant at .001 level.
Table 16
Correlation Study at Defined Learning Levels. SPTE<sub>2</sub> Scores Correlated with ERB Scores: Factor 6.
English Student Populations

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*Significant at .05 level.
**Significant at .01 level.
***Significant at .001 level.
****Significant at .0001 level.
Table 17
Correlation Study at Defined Learning Levels. SPTE\textsubscript{2} Scores Correlated with ERB Scores: Factor 1. Mathematics Student Populations

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*Significant at .05 level.
**Significant at .01 level.
***Significant at .001 level.
Table 18

Correlation Study at Defined Learning Levels. SPTE\textsubscript{2} Scores Correlated with ERB Scores: Factor 2. Mathematics Student Populations

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*Significant at .05 level.
**Significant at .01 level.
***Significant at .001 level.
****Significant at .0001 level.
Table 19
Correlation Study at Defined Learning Levels. SPTE<sub>2</sub> Scores Correlated with ERB Scores: Factor 3. Mathematics Student Populations

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*Significant at .05 level.
**Significant at .01 level.
***Significant at .001 level.
Table 20

Correlation Study at Defined Learning Levels. SPTE\textsubscript{2} Scores Correlated with ERB Scores: Factor 4. Mathematics Student Populations

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*Significant at .05 level.
**Significant at .01 level.
***Significant at .001 level.
Table 21

Correlation Study at Defined Learning Levels. SPTE₂ Scores Correlated with ERB Scores: Factor 5. Mathematics Student Populations

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*Significant at .05 level.
**Significant at .01 Level.
***Significant at .001 level.
****Significant at .0001 level.
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Correlated with ERB Scores: Factor 6.
Mathematics Student Populations

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*Significant at .05 level.
**Significant at .01 level.
***Significant at .001 level.
****Significant at .0001 level.
Table 23
Correlation Study at Defined Learning Levels.
Table of Significant Results:
English Student Populations

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\(^a\) E: English
\(^b\) $^a$: Significant at .05 level
\(^b\): Significant at .01 level
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No * = Significant at the .05 level.
* = Significant at the .01 level.
** = Significant at the .001 level.
*** = Significant at the .0001 level.
Table 24

Correlation Study at Defined Learning Levels.
Table of Significant Results:
Mathematics Student Populations

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Note: * p < 0.05, ** p < 0.01, *** p < 0.001
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- **0.30**
- **0.32**
- **0.34**
- **0.44**
- **0.50**
- **0.53**
- **0.58**
- **0.61**
- **0.48**
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<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- .35**</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-.37</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-.42*</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-.32</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-.43*</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

No * = Significant at the .05 level.
* = Significant at the .01 level.
** = Significant at the .001 level.
*** = Significant at the .0001 level.
comprise that factor at specific learning levels. When a factor is found to be correlated with achievement variables, the items which contributed to that correlation are discernible.

Results of Tests Correlating Mean SPTE\textsubscript{2} Scores with ERB Scores: English Student Populations

Five of the eighteen tests involving the mean SPTE\textsubscript{2} scores produced significant results (28 percent). Four of these correlations were of low magnitude; one test produced a marked correlation.

Two of these significant tests were at the English 8 level; the remaining three were at the English IV level.

There were no significant results produced at any level other than English 8 and English IV when the SPTE\textsubscript{2} variable was the mean of the entire form.

Results of Tests Correlating SPTE\textsubscript{2} Factor Scores with ERB Scores: English Student Populations

Nineteen of the one hundred eight tests at the factor level were significant (18 percent). One of these tests produced a low negative correlation. There were ten low positive correlations and eight marked positive correlations.

The negative correlation was produced at the English II level of learning. This negative correlation involved Factor 1 ("Probing Style of Teaching").

All of the remaining eighteen significant results were produced at either the English 8 or the English IV level. There were seven
significant tests at the English 8 level and eleven at the English IV level. Seven of the eight marked correlations were found at the English IV level; three involved Factor 3 ("Encourages Independent Thinking"); two involved Factor 5 ("Friendly, Concerned"); and two involved Factor 6 ("General, Model, Consistent, Prompt").

Overall, there were five positive correlations at the Factor 5 level and four at the Factor 1 level. Factors 3, 4 and 6 all involved three positive correlations. Factor 4 is "Knowledgeable and Poised." Factor 2 ("Methodology in Presentation") was involved in no significant correlations.

Results of Tests Correlating SPTE2 Item Scores with ERB Scores: 
English Student Populations

Fifty-three of the four hundred thirty-two tests at the item level produced significant results (12 percent). There were forty low positive correlations and eleven marked positive correlations. The remaining two significant correlations were negative. Item 19 tests (one low and one marked) both produced at the English II level. Item 19 was "My teacher discourages differing viewpoints on issues we discuss." The English II level also produced four positive correlations; three low and one marked.

There was one low correlation produced at the English I level. Two correlations were significant at the English III level; one low and one marked.

All of the remaining significant tests occurred at either the English 8 or the English IV level. There were twenty-three signifi-
significant tests at the English 8 level and twenty-one at the English IV level.

All of the English 8 correlations were of a low magnitude. Twelve of the English IV significant tests produced low correlations; nine produced marked correlations.

Overall, Item 9 contributed most often to significant correlations (seven). Items 11, 13, 19 and 21 each contributed five significant correlations. These items are listed in Table 1 and in the Appendix.

Results of Tests Correlating Mean SPTE<sub>2</sub> Scores with ERB Scores: Mathematics Student Populations

Three of the twelve tests involving the mean SPTE<sub>2</sub> scores produced significant results (25 percent). All of these correlations were of low magnitude; two were negative and one was positive. The positive test occurred at the eighth grade level. The negative tests occurred at the eleventh and twelfth grade levels.

There were no significant results produced at any other level when the SPTE<sub>2</sub> variable considered was the mean value for the entire form.

Results of Tests Correlating SPTE<sub>2</sub> Factor Scores with ERB Scores: Mathematics Student Populations

Twenty of the seventy-two tests (28 percent) at the factor level produced significant results. Ten of these significant tests occurred at the Mathematics 8 level, four at the Mathematics 11 level, and six at the Mathematics 12 level.

All of the tests at the Math 8 level produced positive corre-
lations. Seven of the tests produced low correlations and three tests produced marked correlations. The marked correlations involved Factors 2, 5 and 6. All of the factors except Factor 1 produced significant positive results at the Math 8 level. This represents eighty-three percent significant positive results at the Math 8 factor level.

All of the significant tests at both upper levels yielded negative results. Three of the Math 11 tests produced low correlations and one (Factor 4) test produced a marked correlation. Three of the Math 12 tests produced low correlations and the remaining three tests produced marked correlations. The marked correlations involved Factors 2, 4 and 6.

Results of Tests Correlating SPTE7 Item Scores with ERB Scores: Mathematics Student Populations

Seventy-one of the two hundred eighty-eight item tests (25 percent) produced significant results. Twenty-eight of the significant results occurred at the Math 8 level, four at the Math 9 level, two at the Math 10 level, sixteen at the Math 11 level and twenty-one at the Math 12 level.

All of the tests at the Math 8 level were positive. Twenty-five of the correlations were of a low magnitude and three were marked correlations.

The four correlations at the Math 9 level were all negative low correlations. The two correlations at the Math 10 level were positive low correlations.

All of the correlations at the Math 11 level were negative;
ten were of a low magnitude while six were marked correlations.

Fifteen of the tests at the Math 12 level produced negative correlations, while the remaining six tests produced positive correlations. Five of the negative correlations were of a low magnitude and ten were marked correlations. Four of the positive correlations were of a low magnitude and two were marked correlations.

Items which produced significant positive correlations at the Math 8 level produced significant negative correlations at the Math 11 and Math 12 levels.

Summary of Results

In summary, an analysis of the data presented in Table 23 permitted the rejection of the null hypothesis formulated to examine the relationship between scores of students on the SPTE2 form and their ERB scores at each of several defined learning levels as follows. When all the English student populations were considered together H₀₅ was rejected in twenty-eight percent of the tests performed at the level of the entire form, in eighteen percent of the factor level tests and in twelve percent of the item level tests.

When the eighth grade English student population was considered alone however, H₀₅ was rejected in sixty-seven percent of the tests performed at the level of the entire form, in thirty-nine percent of the tests at the factor level and in thirty-two percent of the tests at the item level.

When the twelfth grade English student populations was considered alone, H₀₅ was rejected in one hundred percent of the tests
involving the SPTE₂ mean as a variable, in sixty-one percent of the tests at the factor level and in twenty-nine percent of the tests at the item level.

A similar analysis of the data presented in Table 24 permitted the rejection of \( H_{05} \) in twenty-five percent of the tests at the level of the entire form, in twenty-eight percent of the tests at the factor level and in twenty-five percent of the tests produced at the item level when all the mathematics student populations were considered together.

In contrast, when the eighth grade mathematics student population is considered alone, \( H_{05} \) was rejected in fifty percent of the tests performed at the level of the entire form, in eighty-three percent of the tests at the factor level and in fifty-eight percent of the tests at the item level.

When the eleventh grade student population was considered alone, \( H_{05} \) was rejected in fifty percent of the tests at the form level, in thirty-three percent of the tests at the factor level and in thirty-three percent of the tests at the item level.

Consideration of the twelfth grade student population alone permitted the rejection of \( H_{05} \) in fifty percent of the tests at the form level, in fifty percent of the tests at the factor level and in forty-four percent of the tests at the item level.

These and other summary observations concerning the tests in the remaining populations are graphically depicted in Figure 1 with respect to all the English student populations and in Figure 2 with respect to all the mathematics student populations.
Figure 1. Comparison of Significant Results of Correlation Study by Learning Level: English Student Populations

M = Mean variable
F = Factor variable
I = Item variable
Figure 2. Comparison of Significant Results of Correlation Study by Learning Level:
Mathematics Student Populations

M = Mean variable
F = Factor variable
I = Item variable
Chapter 5

CONCLUSIONS AND OBSERVATIONS

The purpose of this study was to examine the relationships which exist between student achievement and student perception of teacher effectiveness in mathematics and English at specific learning levels. In order to accomplish the purpose of the study, the following tests were performed:

1. Two separate administrations of the Student Perception of Teacher Effectiveness form were correlated in order to determine the reliability of the form. These correlation tests were performed at each item level, at six factor levels (each factor consisted of four items), and at the level of the entire form as indicated by the mean of twenty-four items.

2. Partial correlation tests were performed at each of SPTE\textsubscript{2} levels described to examine the relationship which exists between student perception of teacher effectiveness as determined by the SPTE\textsubscript{2} scores and student achievement as measured by the ERB scores, with the influence of the variable learning level removed.

3. Correlation tests were performed at each of the SPTE\textsubscript{2} levels described to examine the relationship which exists between student perception of teacher effectiveness as determined by the SPTE\textsubscript{2} scores and student achievement as measured by the ERB scores.
at each of several defined learning levels.

CONCLUSIONS

Specific Conclusions

According to the results of the analysis of the data from the tests described above, the following specific conclusions are made:

1. There is no correlation between student achievement as reflected by any of the five categories of ERB scores and student perception of teacher effectiveness as measured by the SPTE scores when the influence of the variable learning level is removed and the populations tested include a number of different learning levels.

2. Student perception of teacher effectiveness as measured by the SPTE form was most often positively correlated at statistically significant levels with student achievement as measured by the ERB scores at the learning levels defined as English 8, English IV and Math 8.

3. Student perception of teacher effectiveness as measured by the SPTE scores was negatively correlated at statistically significant levels with student achievement as measured by the ERB scores at the learning levels defined as Math 11 and Math 12.

General Conclusions

Several limitations existed in this study. Among them were
the uniqueness of the student populations used and the particular
tests used in the collection of the data. In view of the above
limitations, the following general conclusions are made:

1. When used at the eighth and twelfth grade levels by English
teachers, scores on the Student Perception of Teacher Effectiveness
form can be expected to correlate positively with achievement as
reflected by the ERB scores defined in this study.

2. When used by mathematics teachers at the eighth grade level,
scores on the Student Perception of Teacher Effectiveness form can
be expected to correlate positively with achievement as reflected
by the ERB scores defined in this study.

3. When used by mathematics teachers at the eleventh and
twelfth grade levels, scores on the Student Perception of Teacher
Effectiveness form can be expected to correlate negatively with
achievement as reflected by the ERB scores defined in this study.

Concomitant Finding and Conclusion

The Student Perception of Teacher Effectiveness form is a
reliable measuring instrument at the item level, at the factor
level and at the level of the entire form. The form may be con-
sidered a reliable measuring instrument.

OBSERVATIONS

As the range of focus is narrowed from the scope of the entire
form (represented by the mean SPTE score), to the factor and then
the item level, the percentage of significant correlations generally declines.

The significant negative results observed in the Math 11 and Math 12 populations are probably explained by the fact that these students elected to take third and fourth year mathematics courses of an advanced nature. Students in such advanced courses are generally known to be very stringent judges of their instructors and of the material presented to them. College Algebra and Trigonometry, Precalculus and Calculus are some of the mathematics courses taught at these levels.

The English student population labeled English IV, in contrast, contains a heterogeneous mixture of students, since all twelfth grade students are required to take English IV. This population of students is much more heterogeneous than the advanced mathematics student populations both with respect to ability to perform on a standardized achievement test and with respect to the tendency to be stringently critical of their instructors and material. Therefore, test results involving this population could be expected to be positive.

Another possible explanation of the varied results involving the upper level populations will be discussed. Several upper level mathematics students felt that some of the items in the SPTE\textsubscript{2} form "did not apply" to the field of mathematics and so pencilled in "NA" at these items, and left them blank. Two items often so treated by
the upper level mathematics students were Item 7 of Factor 1 ("We do not read subject-related material in books and periodicals outside of class") and Item 3 of Factor 3 ("My teacher sometimes gives the students a choice of how to do an assignment"). Very few students in the English Student Populations treated items in this manner, although they were in fact the same students.

It is also true that very few students in the lower level mathematics populations used the term "NA" and omitted responses. Students at lower levels are more inclined to follow directions. Also, the concept of separateness of fields of learning is not as strong at lower levels as it is at upper levels.

The small sizes of the populations involved in this study also permit the characters of the few teachers involved to exert a strong influence on the nature of the results of the tests. Such observations point out the need for studies of this nature to encompass much larger populations if the results are to be widely generalizable.

Further studies using the populations involved in this work might consider growth as a product criterion rather than achievement, since growth would appear to be a more direct measure of product than is achievement. This could be accomplished by using, as the product variable, a value representing the difference between two consecutive ERB scores for each subject.
SELECTED BIBLIOGRAPHY


Gurney, David W. "Judging Effective Teaching." Phi Delta Kappan, 58, No. 10 (June 1977), 774-775.


APPENDIX A

"EDUCATIONAL RECORDS BUREAU

COMPREHENSIVE TESTING PROGRAM APTITUDE ACHIEVEMENT TEST"

LEVEL 4 - FORM A
LEVEL 4 - FORM A

GENERAL DIRECTIONS:

This is a test of your abilities and some of the skills and understandings you have been developing in school. Your score will be the total number of correct answers you mark. Wrong answers will not be counted against you.

Do not spend too much time on any one question. If a question seems to be too difficult, make the most careful guess you can.

Mark your answers on the separate answer sheet. Mark only one answer for each question. If you want to change an answer, erase your first mark completely.

Do not open this booklet until you are told to do so.
Part I Verbal-Directions

Each question begins with two words. These two words go together in a certain way. Under them, there are four other pairs of words lettered A, B, C, and D. Find the lettered pair of words that go together in the same way as the first pair of words.

Then, find the row of circles on your answer sheet which has the same number as the question. In this row of circles, mark the letter of the pair of words you have chosen.

See how these examples are marked:

EXAMPLE 1

calf : cow ::

A puppy : dog
B nest : bird
C horse : bull
D shell : turtle

In the first pair of words (calf : cow), calf goes with cow in this way—a calf is a young cow.

The only lettered pair of words that go together in the same way is puppy : dog. A puppy is a young dog.

Circle A is marked because the letter in front of puppy : dog is A.

EXAMPLE 2

minute : second ::

A time : clock
B mile : travel
C hour : measure
D foot : inch

In the first pair of words (minute : second), minute goes with second in this way—a minute is made up of seconds.

The only lettered pair of words that go together in the same way is foot : inch. A foot is made up of inches.

Circle D is marked because the letter in front of foot : inch is D.

STOP. Wait for further directions.
Part 1 20 minutes: 50 questions

1. writer : book :: A. student : chalk  
   B. explorer : land  
   C. painter : picture  
   D. children : school

2. pick : fruit :: A. reap : grain  
   B. cut : sword  
   C. want : wish  
   D. close : door

3. ant : insect :: A. duck : pond  
   B. rabbit : pen  
   C. squirrel : nuts  
   D. dog : mammal

4. stable : horse :: A. glove : hand  
   B. shed : farm  
   C. field : grass  
   D. kennel : dog

5. truck : vehicle :: A. dress : clothing  
   B. plant : soil  
   C. heat : summer  
   D. bus : highway

6. hungry : eat :: A. cold : freeze  
   B. tired : sleep  
   C. thirsty : swallow  
   D. happy : laugh

7. hill : mountain :: A. island : sea  
   B. brook : river  
   C. tree : forest  
   D. city : country

8. meal : banquet :: A. diamond : jewel  
   B. car : limousine  
   C. design : ornament  
   D. silver : gold

9. midshipman : naval officer :: A. intern : doctor  
   B. amateur : professional  
   C. legislator : representative  
   D. substitute : teacher

10. governor : state :: A. mayor : city  
    B. commissioner : policemen  
    C. president : public  
    D. trustee : college

11. rind : orange :: A. pod : stalk  
    B. meat : nut  
    C. kernel : husk  
    D. shell : egg

12. launderess : washing :: A. cobbler : shining  
    B. actress : applauding  
    C. milliner : modelling  
    D. seamstress : sewing

13. troop : soldiers :: A. audience : actors  
    B. ship : marines  
    C. crew : sailors  
    D. police : criminals

14. cider : apple :: A. jam : peach  
    B. wine : grape  
    C. preserve : apricot  
    D. pie : pumpkin

15. croquet : mallet :: A. baseball : bat  
    B. hockey : puck  
    C. shooting : bullet  
    D. flying : wings

16. problem : solve :: A. dilemma : confuse  
    B. detour : travel  
    C. deprivation : need  
    D. disease : cure

17. ship : anchor :: A. blimp : balloon  
    B. motorcycle : scooter  
    C. automobile : brake  
    D. railroad : track

18. baseball : umpire :: A. bowling : pins  
    B. swimming : diver  
    C. boxing : referee  
    D. wrestling : ring

19. glacier : ice :: A. lake : water  
    B. sky : cloud  
    C. valley : hill  
    D. storm : rain

20. meat : main course :: A. dressing : salad  
    B. cake : dessert  
    C. tea : coffee  
    D. milk : cream

21. jail : cell :: A. barn : coop  
    B. house : room  
    C. building : floor  
    D. garage : car

22. fish : shark :: A. bird : fledgling  
    B. reptile : crocodile  
    C. crab : claws  
    D. lion : tiger

23. rustler : cattle :: A. kidnapper : person  
    B. thief : money  
    C. pirate : ship  
    D. murderer : gun

24. acre : area :: A. inch : gas  
    B. mile : speed  
    C. knot : boat  
    D. quart : volume
| 25 waist : man :: A equator : world B fur : animal C boundary : countries D stream : land |
| 33 scissors : shears :: A hammer : chisel B pliers : awl C lever : wedge D knife : machete |
| 41 towel : dry :: A sponge : spill B laundry : rinse C apron : protect D pot : heat |
| 26 stone : peach :: A juice : pineapple B skin : pear C seed : apple D bunch : banana |
| 34 bookcase : shelf :: A desk : top B bureau : drawer C closet : hook D table : leg |
| 42 wrist watch : clock :: A corsage : bouquet B flower : garden C bracelet : ring D toy : implement |
| 27 library : borrower :: A building : student B bookstore : buyer C magazine : publisher D market : clerk |
| 35 athlete : tournament :: A delegate : convention B runner : track C actor : audience D moderator : discussion |
| 43 pneumonia : lungs :: A complication : skin B digestion : stomach C arthritis : joints D fracture : muscles |
| 28 cottage : house :: A suitcase : trunk B envelope : letter C print : typewriter D can : bottle |
| 36 eager : reluctant :: A hasty : cautious B calm : tranquil C tardy : hesitant D quick : nimble |
| 44 baton : conductor :: A horn : artist B gavel : judge C bandage : doctor D curtsy : ballerina |
| 29 rebellion : obedience :: A cowardice : bravery B adventure : excitement C loyalty : allegiance D anger : resentment |
| 37 board : airplane :: A open : bottle B travel : railroad C attend : meeting D enter : building |
| 45 ice cream : confection :: A cake : frosting B pie : pastry C jam : fruit D meat : animal |
| 30 clothing : shirt :: A food : meat B saucer : cup C jewelry : lace D linen : thread |
| 38 legend : history :: A experiment : proof B fiction : poem C biography : anthology D rumor : report |
| 46 bank : money :: A sin : folder B store : sales C factory : produce D restaurant : china |
| 31 fragrant : stench :: A dirty : rubbish B palatable : food C pretty : eyesore D audible : noise |
| 47 trapeze : acrobat :: A role : actor B circus : clown C gymnasium : athlete D dumbbell : weightlifter |
| 32 ink : blotter :: A paint : palette B water : sponge C crayon : paper D chalk : dust |
| 40 tissue paper : cardboard :: A chain : wire B envelope : letter C cellophane : tape D chiffon : corduroy |
| 48 taste : bland :: A smell : fragrant B color : pale C view : spacious D sound : loud |

Go on to the next page.
49 butter : margarine ::
A wine : vinegar
B corn : maize
C salt : seasoning
D sugar : saccharin

50 poison : injurious ::
A medicine : therapeutic
B remedy : ineffective
C beverage : alcoholic
D drug : lethal

STOP. If you finish before time is called, check your work on this part.
Do not go on to Part II or turn to any other test in this book.
### Part II Quantitative-Directions

Each of the following questions has two parts. One part is in Column A. The other part is in Column B.

You must find out if one part is greater than the other, or if the parts are equal, or if not enough information is given for you to decide.

Then, find the row of circles on your answer sheet which has the same number as the question. In this row of circles, mark:

- **A** if the part in Column A is greater,
- **B** if the part in Column B is greater,
- **C** if the two parts are equal,
- **D** if not enough information is given for you to decide.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE 1</td>
<td>10</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>B C D</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The part in Column A (10) is greater than the part in Column B (9). Circle A is marked because the part in Column A is greater.</td>
<td></td>
</tr>
</tbody>
</table>

| EXAMPLE 2 | 2        | A      |
| Column A | 1 + 2    | C      |
| Column B | 1 + 2    | C      |
|          | **Note:** The part in Column B (1 + 2) is greater than the part in Column A (2). Circle B is marked because the part in Column B is greater. |

| EXAMPLE 3 | 5 cents  | A      |
| Column A | 1 nickel | C      |
| Column B | 1 nickel | C      |
|          | **Note:** The value of 5 cents is 5 cents. The part in Column B (1 nickel) is also equal to 5 cents. Circle C is marked because the parts are equal. |

| EXAMPLE 4 | x        | A      |
| Column A | y        | B C D  |
|          |          |        |
|          | **Note:** There is an x in Column A and a y in Column B. You are not told what numbers x and y represent. Therefore, you can not tell which part is greater, or if the two parts are equal. Circle D is marked because not enough information is given for you to decide. |

**NOTE:** Letters such as x, n, and k stand for real numbers. If the same letter appears in both columns of a question, it stands for the same number.

STOP. Wait for further directions.
Part III: 20 minutes; 50 questions

A. The part in Column A is greater.
B. The part in Column B is greater.
C. The two parts are equal.
D. Not enough information is given to decide.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>46.872</td>
</tr>
<tr>
<td>2</td>
<td>4 = 4</td>
</tr>
<tr>
<td>3</td>
<td>24 inches in 1 foot</td>
</tr>
<tr>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td>5</td>
<td>.81</td>
</tr>
<tr>
<td>6</td>
<td>The area of a rectangle with length 2</td>
</tr>
<tr>
<td>7</td>
<td>1000 days</td>
</tr>
<tr>
<td>8</td>
<td>Area of this triangle</td>
</tr>
<tr>
<td>9</td>
<td>30 miles per hour</td>
</tr>
<tr>
<td>10</td>
<td>The age of Joe's brother if Joe is 14</td>
</tr>
<tr>
<td>11</td>
<td>3 - 2</td>
</tr>
<tr>
<td>12</td>
<td>The average of 3, 5, and 7</td>
</tr>
<tr>
<td>13</td>
<td>.3242 - .3840</td>
</tr>
<tr>
<td>14</td>
<td>The amount more you have to save to buy a game if you have $1.50</td>
</tr>
<tr>
<td>15</td>
<td>897 x 2</td>
</tr>
<tr>
<td>16</td>
<td>.01</td>
</tr>
<tr>
<td>17</td>
<td>The number p if p + q = 1</td>
</tr>
<tr>
<td>18</td>
<td>Length of PR</td>
</tr>
<tr>
<td>19</td>
<td>The area of triangle PQR</td>
</tr>
<tr>
<td>20</td>
<td>Actual distance from Rye to York if dotted line above is 1\frac{1}{2} inches long</td>
</tr>
<tr>
<td>Column A</td>
<td>Column B</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>21</td>
<td>A number M which is greater than 7</td>
</tr>
<tr>
<td>22</td>
<td>Number of minutes in 2 half-hours</td>
</tr>
<tr>
<td>23</td>
<td>Value of 22 dimes</td>
</tr>
<tr>
<td>24</td>
<td>$507 of 8</td>
</tr>
<tr>
<td>25</td>
<td>$10.60</td>
</tr>
<tr>
<td>26</td>
<td>$\frac{1}{2}$ of 2</td>
</tr>
<tr>
<td>27</td>
<td>$(5 \times 8) - (3 \times 8)$</td>
</tr>
<tr>
<td>28</td>
<td>$3 \times (1 + 1 + 1)$</td>
</tr>
<tr>
<td>29</td>
<td>$0.346$</td>
</tr>
<tr>
<td>30</td>
<td>$6 \times 3 \times 6 \times 3$</td>
</tr>
<tr>
<td>31</td>
<td>$11 + x$</td>
</tr>
<tr>
<td>32</td>
<td>The average of 3, 3, 3, and 1</td>
</tr>
<tr>
<td>33</td>
<td>This number on this number line</td>
</tr>
<tr>
<td>34</td>
<td>The remainder when 27 is divided by 5</td>
</tr>
<tr>
<td>35</td>
<td>Number of shopping days before Christmas and after November 1</td>
</tr>
<tr>
<td>36</td>
<td>Weight of 1 pound</td>
</tr>
<tr>
<td>37</td>
<td>The number x if $\frac{3}{5} = \frac{2}{4}$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>The largest multiple of 3 above</td>
</tr>
<tr>
<td>39</td>
<td>Mary’s savings, if she saved one-half of her allowance</td>
</tr>
<tr>
<td>40</td>
<td>Largest even number less than 4</td>
</tr>
<tr>
<td>41</td>
<td>Least common denominator of $\frac{1}{2}$ and $\frac{1}{3}$</td>
</tr>
<tr>
<td>42</td>
<td>$x + x + x$</td>
</tr>
<tr>
<td>43</td>
<td>A number, if one-half of it is 4</td>
</tr>
<tr>
<td>44</td>
<td>$\frac{57}{1000}$</td>
</tr>
<tr>
<td>45</td>
<td>If $N$ is a positive number</td>
</tr>
<tr>
<td>46</td>
<td>$60 \times .35$</td>
</tr>
<tr>
<td>47</td>
<td>A whole number that is greater than 6</td>
</tr>
<tr>
<td>48</td>
<td>$0.11$</td>
</tr>
<tr>
<td>49</td>
<td>Area of circle with radius 1 foot</td>
</tr>
</tbody>
</table>

A B C D

Segments AC and BD have equal lengths.

| 50       | Length of BC | Length of CD |

STOP. If you finish before time is called, check your work on Part II.
Do not go back to Part I or turn to any other test in this book.
Mathematics Basic Concepts

Directions

Each question in this test is followed by four suggested answers.
Read each question and then decide which one of the four suggested answers is best.
Find the row of circles on your answer sheet which has the same number as the question.
In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE

A 48-inch rope was shortened by cutting 2 inches from each end. How long is it now?
A 44 inches       Answer
B 45 inches
C 46 inches       A B C D
D 47 inches

The correct answer to this question is lettered A, so circle A is marked.

Note: Figures which accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that its figure is not drawn to scale. All figures lie in the plane unless otherwise indicated.

STOP. Wait for further directions.
1. If \(2,405 = 2,000 + N + 5\), then \(N =\)
   A 4,000  B 400  C 40  D 4

2. \[
\begin{array}{c}
2431 \\
\times 1253
\end{array}
\]
\[
\hspace{1cm} 3046043
\]
Which of the following numerals goes in the \(\square\) above?
A 2431  B 4862  C 7293  D 12155

3. Cindy is younger than Peg. Jane is older than Peg. Barbara is younger than Cindy. Who is second oldest?
A Peg  B Cindy  C Jane  D Barbara

4. When it left the station, a bus was carrying 40 passengers. At the first stop, 3 passengers got off and 7 passengers got on. How many passengers were then riding in the bus?
A 34  B 36  C 42  D 44

5. If Alice baby-sits for Mrs. Jones from 10:00 a.m. to 4:30 p.m., how many hours does she baby-sit?
A \(5\frac{1}{2}\)  B 6  C 6\frac{1}{2}  D 7

6. The bar graph above shows the relative costs of four items in a budget. The cost of which item is about 50 percent of the budget?
A P  B Q  C R  D S

7. Which product will always be a whole number?
A A fraction times a fraction
B A fraction times a whole number
C A decimal fraction times a whole number
D A whole number times a whole number

8. The number of nails in 6 packages of 20 nails each is equal to the number of nails in
A 12 packages of 10 each.
B 12 packages of 40 each.
C 3 packages of 10 each.
D 2 packages of 40 each.

9. If \(6 + N = 6\), which statement is true?
A \(N \times 6 = 6\)  B \(N + 6 = 6\)
C \(6 - N = 6\)  D \(6 + 6 = N\)

10. If a distance of 350 miles is represented by a segment of 14 inches on a map, then on the map 1 inch represents
A 4 miles  B 25 miles.
C 40 miles  D 250 miles.

11. The symbol \(>\) means "is greater than." Which statement is true?
A \(\frac{1}{5} > \frac{1}{4}\)  B \(\frac{1}{2} > \frac{1}{3}\)
C \(\frac{1}{9} > \frac{1}{8}\)  D \(\frac{1}{6} > \frac{1}{5}\)

12. If \(p = 18\), then \(\frac{2}{3} \times p =\)
A 6  B 9  C 12  D 15

Go on to the next page.
13. In the figure above, which point is halfway between M and N?
   A 2  B 3  C 4  D 5

14. A boy ran the 440-yard dash in 53.04 seconds and later ran the dash in 51.95 seconds. By how much did he better his time?
   A 1.09 seconds  B 1.19 seconds  C 2.09 seconds  D 2.19 seconds

15. If $6 \times 9 = (n + 1) \times 9$, then $n =$
   A 6  B 5  C 3  D 2

16. The area of which rectangle has been divided into four nonoverlapping regions of equal area?
   A
   B
   C
   D

17. Tom has a rope 3.987 yards long. Jim has a rope half as long. The approximate length of Jim's rope is

18. What is the top safe speed indicated for stopping within a maximum distance of 140 feet?
   A 30 miles per hour  B 40 miles per hour  C 50 miles per hour  D 120 miles per hour

19. If Mr. Smith is traveling at 60 miles per hour when he sees a car backing from a driveway into his lane, in how many feet can Mr. Smith stop his car?
   A 35  B 65  C 230  D 250

20. The reaction-time distance for a speed of 80 miles per hour is about how many times as great as the reaction-time distance for a speed of 20 miles per hour?
   A 2  B 4  C 6  D 11

21. If the diameter of a circle is 8, then 3 times the radius of the circle is
   A 6  B 8  C 12  D 24
22. Water pours into a pool at a constant rate of 15 gallons every 3 minutes. What is this rate in gallons per hour?
   A. 75 gallons per hour  
   B. 150 gallons per hour  
   C. 180 gallons per hour  
   D. 300 gallons per hour

23. In the figure above, if the four-minute clock is accurate and is started at 0 and stopped 32 minutes later, at which number will it stop?
   A. 0  
   B. 1  
   C. 2  
   D. 3

24. \(4xy - 9xy = \)
   A. \(-13xy\)  
   B. \(13xy\)  
   C. \(-5xy\)  
   D. \(5xy\)

25. If a number is a multiple of 3, then the sum of its digits is always a multiple of
   A. 2  
   B. 3  
   C. 6  
   D. 9

26. Which region has the greatest area?
   A.  
   B.  
   C.  
   D. 

27. If \(N\) is an even number, then the first odd number greater than \(N + 1\) is
   A. \(N - 1\)  
   B. \(N + 2\)  
   C. \(N + 3\)  
   D. \(N + 4\)

28. The average of three different numbers is always
   A. the sum of the numbers.
   B. the middle number.
   C. the sum of the numbers divided by three.
   D. half the sum of the least and greatest numbers.

29. Each member of York Council belongs to exactly one of three parties. If \(\frac{1}{4}\) of the members belong to the Chartist party and \(\frac{1}{3}\) belong to the Whig party, what fractional part of the members belong to the third party?
   A. \(\frac{1}{4}\)  
   B. \(\frac{1}{3}\)  
   C. \(\frac{1}{2}\)  
   D. \(\frac{1}{6}\)

30. What is the volume of the box above?
   A. 8 cubic inches  
   B. 16 cubic inches  
   C. 60 cubic inches  
   D. 80 cubic inches

31. If \(S = \{0, 2, 5, 9\}\) and \(T = \{1, 5, 8\}\), then the union of \(S\) and \(T\) is equal to
   A. the empty set  
   B. \(\{5\}\)  
   C. \(\{1, 5, 8\}\)  
   D. \(\{0, 1, 2, 5, 8, 9\}\)

32. If \(4 - 8 + 3 - 7 + 10 + □ = 0\), which number goes in the □?
   A. 2  
   B. -2  
   C. -10  
   D. -18

Go on to the next page.
33. In the figure above, if circular region A represents the set of all multiples of 2 and circular region B represents the set of all multiples of 3, then the shaded region represents the set of all multiples of A 4 B 5 C 6 D 8

34. In the figure above, x = A 45 B 60 C 75 D 80

35. If the perimeter of an equilateral triangle is 12x, then a side of the triangle is A 2x B 3x C 4x D 6x

36. \(1 - \sqrt{3}^2 = \) A 4 B 2 C -2 D -4

37. Eight segments with lengths listed above are available for constructing polygons. The perimeter of a hexagon constructed from these segments could be any of the following EXCEPT A 17 B 16 C 4 D 10

38. Which can be expressed as a repeating decimal? A \(\frac{2}{3}\) B \(\frac{\sqrt{3}}{2}\) C (\(\sqrt{2}\)1\(\sqrt{3}\)) D \(2\sqrt{3}\)

39. If one complete edge of a rectangular floor is tiled with exactly 16 square tiles, each 9 inches on a side, then the length of the room along this edge is A 9 feet B 12 feet C 16 feet D 144 feet

40. If the average of 5 integers is 12 and the sum of 4 of the integers is 52, then the 5th integer is A 8 B 12 C 40 D 60

41. In air navigation, directions from a point are measured in degrees from magnetic north. Thus, in the figure above, point R is 180° from magnetic north. Which point is 100° from magnetic north and 15 miles from P? A A B B C C D D

42. Which is a counterexample to the statement "The set \{0, 1, 2\} is closed with respect to addition"? A 0 + 1 = 1 B 0 + 2 = 2 C 1 + 1 = 2 D 1 + 2 = 3
In the figure above, what is the value of \( y \) in terms of \( x \)?

A \( \frac{x}{2} \)  
B \( 180 - x \)  
C \( \frac{180 - x}{2} \)  
D \( x = 90 \)

If the radius of circle \( P \) is 9 and the radius of circle \( Q \) is 8, then the area of \( P \) is how much greater than the area of \( Q \)?

A \( 1 \)  
B \( \pi \)  
C \( 17 \)  
D \( 17\pi \)

If \( \Delta \) represents a whole number greater than 1, which fraction is least?

A \( \frac{1}{\Delta} \)  
B \( \frac{1}{3\times\Delta} \)  
C \( \frac{1}{\Delta + 1} \)  
D \( \frac{1}{\Delta - 1} \)

The area of the shaded region above is

A 20 square feet.  
B 24 square feet.  
C 40 square feet.  
D 52 square feet.
49. Each of the following could be a numeral in base five notation EXCEPT
   A 22
   B 23
   C 24
   D 25

50. If the measures of the two shorter sides of a right triangle are 3 and 4, then the measure of the longest side is
   A 5
   B 6
   C 7
   D 8

STOP. If you finish before time is called, check your work on this test.
Do not turn to any other test in this book.
Mathematics Computation

Directions

Each problem in this test is followed by four suggested answers. Read each problem and then decide which one of the four suggested answers is correct. Find the row of circles on your answer sheet which has the same number as the problem. In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE

54
-48

A 6
B 7
C 16
D 102

Answer

The correct answer to this problem is lettered A, so circle A is marked.

STOP. Wait for further directions.
40 minutes: 60 questions

1. $258 + 845 = 1103$
   A. 1,305
   B. 1,315
   C. 1,345
   D. 1,135

2. $57 \times 32 = 1,824$
   A. 1,734
   B. 1,824
   C. 2,734
   D. 2,824

3. $627 \div 4$
   A. 2 remainder 6
   B. 6 remainder 1
   C. 6 remainder 2
   D. 6 remainder 4

4. $864 + 32 + 8 + 517 + 64 = 1,507$
   A. 1,485
   B. 1,557
   C. 1,565
   D. 3,141

5. $7209 + 9 = 7218$
   A. 8
   B. 81
   C. 801
   D. 810

6. $\frac{9}{27} = \frac{1}{3}$
   A. $\frac{1}{3}$
   B. $\frac{1}{9}$
   C. $\frac{1}{6}$
   D. $\frac{1}{4}$

7. $6.54 \times 40.8 = 267.0272$
   A. 32.532
   B. 279.072
   C. 329.32
   D. 2,790.12

8. $13.69 \div 10.99 \div 55.49 =
   A. 0.0029001
   B. 0.0029017
   C. 0.005007
   D. 0.005017

9. $\frac{0}{3} + \frac{1}{3} + \frac{2}{3} = \frac{3}{3} = 1$
   A. $\frac{1}{3}$
   B. $\frac{2}{3}$
   C. $\frac{3}{3}$
   D. 1

10. $3794 - 288 = 3,506$
    A. 2,916
    B. 3,406
    C. 3,506
    D. 3,516

11. $2(65 + 42) =
    A. 108
    B. 107
    C. 172
    D. 214
12 If x is 4, then \((6 - x)(6 + x) = \)
A 4
B 20
C 36
D 100

13 \(4 \times \frac{3}{5} = \)
A \(\frac{12}{5}\)
B \(\frac{24}{5}\)
C \(\frac{48}{5}\)
D \(\frac{64}{5}\)

14 11 pounds 2 ounces
   10 pounds 6 ounces
   +13 pounds 11 ounces
   \(\begin{array}{l}
   A 34 pounds 3 ounces \\
   B 34 pounds 9 ounces \\
   C 35 pounds 3 ounces \\
   D 35 pounds 9 ounces \\
   \end{array} \)

15 100.2 - 99.0 =
A 1.1
B 1.2
C 10.2
D 11.2

16 \(\frac{552}{46} = \)
A 11
B 12
C 13
D 14

17 If \(\frac{5}{x} = \frac{1}{4} \), then x =
A \(\frac{1}{4}\)
B \(\frac{1}{5}\)
C \(\frac{1}{6}\)
D 20

18 \(\frac{1}{4} \) of a yard =
A 12 inches
B 9 inches
C 6 inches
D 4 inches

19 87684
A 63
B 67
C 71
D 75

19 7 is to 21 as 12 is to
A 3
B 28
C 36
D 64

21 \(\begin{array}{c}
23 \\
+ 21 \\
\end{array} \)
A \(\frac{33}{1} \)
B \(\frac{34}{1} \)
C \(\frac{54}{1} \)
D \(\frac{51}{1} \)

22 \(.00615 \times 1000 = \)
A .0615
B .615
C 6.15
D 61.5

23 \(\frac{73}{24} \)
A 3
B 28
C 36
D 64

Go on to the next page.
24 \frac{7}{8} =
A 87\% 
B 66\% 
C 62\% 
D 37\%

25 \frac{4}{6} =
A 1\% 
B 2\% 
C 3\% 
D 1

26 \frac{87.032}{295} =
A 0.004 
B 0.04 
C 0.4 
D 4

27 \frac{8(2 - 4) - (8 + 4)}{4} =
A 0 
B 2 
C 9 
D 10

28 295 - 772 =
A 217\% 
B 217\% 
C 227\% 
D 227\%

29 \text{If } P = 2(L + W), \text{ L = 7, and } W = 5, \text{ then } P =
A 24 
B 19 
C 17 
D 12

30 \cdot 8 \times .6 =
A 1\% 
B 2\% 
C 3\% 
D 0\%

31 7.2 + 1\% =
A 8\% 
B 9 
C 9\% 
D 9\%

32 1\% \times 0.4 =
A 7 
B 8 
C 9 
D 10

33 \frac{16 - 4.126}{4} =
A 11.174 
B 11.574 
C 12.184 
D 12.574
35. \(488 - 1.9 + 10.1 = \)
   A  490
   B  499
   C  500
   D  500

36. 16% of 3 =
   A  0.48
   B  4.8
   C  48
   D  48

37. \(6\frac{1}{2} - 2\frac{1}{2} = \)
   A  2\frac{1}{2}
   B  3
   C  3\frac{1}{2}
   D  3\frac{1}{2}

38. \((3 \times 10^4) + (3 \times 10^2) = \)
   A  30300
   B  3300
   C  3030
   D  330

39. 3.3168 rounded off to the nearest hundredth is
   A  3.3
   B  3.31
   C  3.317
   D  3.32

40. 61 miles per hour is approximately
   A  \(\frac{1}{2}\) miles per minute
   B  \(\frac{1}{2}\) miles per minute
   C  \(\frac{1}{2}\) mile per minute
   D  \(\frac{1}{2}\) mile per minute

41. \(-\frac{5}{-6} = \)
   A  \(-\frac{1}{2}\)
   B  \(-\frac{1}{3}\)
   C  \(\frac{1}{4}\)
   D  \(\frac{1}{3}\)

42. \(5 - \frac{3}{4} = \)
   A  \(\frac{1}{4}\)
   B  \(\frac{1}{3}\)
   C  \(\frac{1}{4}\)
   D  \(\frac{1}{5}\)

43. Which of the following is greatest?
   A  .2
   B  \(\frac{1}{2}\)
   C  .002
   D  \(\frac{1}{3}\)

44. 2000.
   -227.37
   A  2202.63
   B  2263.37
   C  2263.63
   D  2272.37

45. If \(s = 49\), then \(s^2 = \)
   A  2401
   B  2261
   C  95
   D  7

46. \((5 + 4)^3 = \)
   A  27
   B  189
   C  243
   D  729

47. 12% of 10% of 30 =
   A  .36
   B  .66
   C  3.6
   D  66

48. If \(x = \sqrt{56}\), then
   A  \(4 < x < 5\)
   B  \(5 < x < 6\)
   C  \(6 < x < 7\)
   D  \(7 < x < 8\)
STOP. If you finish before time is called, check your work on this test.
Do not turn to any other test in this book.
Reading

Part I Vocabulary-Directions

Each of the sentences in this part of the test is followed by an incomplete statement and four suggested answers.
You are to decide which one of these answers best completes the statement. Your choice should be made on the basis of what is stated or implied in the sentence.
Find the row of circles on your answer sheet which has the same number as the sentence. In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE
The policeman told the boy that the candy store was right around the corner.
The policeman was
A mean.
B helpful.
C big.
D important.

Since the policeman was helpful, the correct answer to this sentence is B. Therefore, circle B is marked.

STOP. Wait for further directions.
Part 1 30 minutes 80 questions

1. Leo dreaded his first day as a salesman because he knew he would never be able to speak to so many strangers.
   Leo was

2. Many free-swimming animals and fishes have silvery-white bellies and are therefore invisible to enemies swimming below them.
   The animals' coloring is a means of

3. Andy's father hugged him and told him that he understood why he was so sad.
   Andy's father was

4. Since neither side would concede anything, they haggled for hours without reaching an agreement.
   Haggled means

5. When Jean wanted to join their gang, they rebuffed her; but now that Jean is famous, they regret their action.
   Rebuffed means

6. The high winds and violent rain lacerated the flag until it was hanging in shreds.
   Lacerated means
12 Diana enjoyed conversing with her teacher because they had many interesting things to discuss.

Conversing means
A thinking. B working. 
C talking. D singing.

13 Paying no attention to anyone's warnings, Lee rushed to join the fight and was lucky to escape alive.

Lee was
A thoughtful. B curious. 
C foolhardy. D courteous.

14 The rain had abated a little, so he opened a window and let in a rush of warm fragrant air.

Abated means
A continued. B pattered. 
C let up. D washed away.

15 When they could bear no more mistreatment, the crew mutinied and locked the captain in his cabin.

Mutinied means
A resigned. B debated. 
C submitted. D rebelled.

16 It was Harry's ungainly movements rather than his plain face that caused the other students to ridicule him.

Ungainly means
A clumsy. B sudden. 
C weak. D friendly.

17 Susan had said that she did not have any candy, but Mary thought Susan was lying.

Mary was
C fearful. D selfish.

18 They embellished their table with silver candlesticks and a centerpiece of flowers.

Embellished means
A replaced. B decorated. 
C disguised. D surrounded.

19 The tropical climate enervates newcomers; they sleep more than usual, lack energy, and find working difficult.

Enervates means
A weakens. B delights. 
C bores. D emboldens.

20 Despite her fame, she lived simply, never refused a request, and was sincerely surprised when her accomplishments were honored.

The woman was
A humble. B honest. 
C determined. D confident.

21 Checking to be sure no one was watching him, Bradley opened the drawer, pulled out a notebook, and quickly hid it in his pocket.

Bradley's behavior was
A casual. B stealthy. 
C comical. D bashful.

22 The new process prints twice as many copies in the same time and at the same cost as the old one.

The new process is more
A complicated. B efficient. 
C scientific. D lasting.

23 The teacher had to endorse the students' research topics before they would be allowed to begin their projects.

Endorse means
A grade. B scale. 
C heed. D approve.
24 When the master frowned, we knew that a stern punishment would follow.

The master's frown was
A mysterious. B ominous.
C puzzled. D unbecoming.

25 The ideas of the two girls were antithetical; Lillian felt they should go to school and Linda did not want to.

Antithetical means
A unexpected. B opposite.
C ridiculous. D optional.

26 The pyramids were built of limestone and granite, so that they would last through the ages.

The builders wanted the pyramids to be
A ornamental. B useful.
C modest. D durable.

27 The queen was preening before her mirror—fluffing her hair, smoothing her dress, and adjusting her jewelry.

Preening means
A primping. B disrobing.
C rehearsing. D cleaning.

28 In our time only a few doctors have ever seen a case of smallpox, for Edward Jenner discovered the technique of vaccination, which gave general immunity from this once widespread disease.

Jenner's technique was
A invulnerable. B effective.
C deceptive. D provisional.

29 After all the experts had declared that the problem could not be solved, Holmes figured it out by putting it in three-dimensional terms.

Holmes's solution was
A miraculous. B obvious.
C ingenious. D inexpensive.

30 The warm Florida winters induce many northerners to travel south during the months of January and February.

Induce means
A warn. B force.
C persuade. D permit.

31 Competition occurs when a large number of firms make similar products.

These firms are
A rivals. B profiteers.
C usurpers. D subordinates.

32 Many of the ancient writings are still legible despite the effects of dampness and age.

Legible means
A unrecognizable. B movable.
C readable. D meaningful.

33 Long ago, sailing ships ran many risks; storms, water shortages, food shortages, and getting lost were threats on every voyage.

Sailing was
A mysterious. B leisurely.
C perilous. D amazing.

34 The fire had obliterated all signs that a building had existed on the lot.

Obliterated means
A missed. B showed.
C erased. D heated.

35 "The unbelievable prodigality of the present administration," thundered the candidate for election, "has caused taxes to rise to a disgraceful new high; why, even their scratch pads are made of the most expensive paper on the market!"

Prodigality means
A conservatism. B ignorance.
C ineffectiveness. D wastefulness.
36 Adams' speech was completely extem­poraneous: she just said whatever came to mind.

Extemporaneous means
A intellectual. B unprepared.
C muddled. D incorrect.

37 The repairman had been trained well; he found the trouble easily and was able to correct it.

The repairman was
A awkward. B cautious.
C impetuous. D competent.

38 "Hard work is indispensable in achieving one's goal," the lecturer informed the audience. "Without it success is impossible."

Indispensable means
A attractive. B necessary.
C helpful. D drastic.

39 Student exchanges with foreign countries were established to foster international understanding.

Foster means
A force. B control.
C expose. D promote.

40 Tina and Jenny liked to imagine how the ability to travel to other planets would change the lives of people on the earth.

The girls' thinking was
A controversial. B unconcerned.
C unclear. D speculative.

41 Professor Smith's book discusses several ways of controlling diseases that affect great numbers of people at the same time in certain areas of the world.

The book is concerned with the control of
A epidemics. B population.
C insect pests. D vaccines.

42 As the scientist opened the epistle from her associate, she wondered what information it would contain.

Epistle means
A package. B post card.
C letter. D gift.

43 Even though Robert's suggestions were often good ones, they were stated in such a peremptory manner that the other members of the committee usually resented them.

Peremptory means
A grave. B courageous.
C sorrowful. D arrogant.

44 No matter how often Jeff traveled with the football team, his father insisted that he telephone home several times during each trip to let them know he was safe.

Jeff's father was
A anxious. B angry.
C suspicious. D stingy.

45 It appeared that the editor had been indispensable since the magazine was forced to close down after her death.

Indispensable means
A unsuccessful. B essential.
C impoverished. D lovable.

46 The eyewitness narrated events preceding the arrests and answered questions for reporters.

Narrated means
A foresaw. B forgot.
C confused. D related.
47 The brilliant interpretation and flawless technique of the violinist’s performance belied her humble claim that she was just an average player.

Belied means

48 Educated Athenians did not specialize in a single art or profession—they studied in many fields and were passionately eager to learn.

Educated Athenians were

49 After falsely accusing the girl, Edgar could neither escape his conscience nor forget his guilt.

Edgar felt

50 Paracelsus left his country and remained a destitute wanderer for the rest of his life, for his enemies had prepared a charge of treason against him that would have cost him his life if he had returned.

Paracelsus became

51 Small dogs, which have a tendency toward nervousness, are often much less amiable than large dogs.

Amiable means

52 Our food supply exactly matched our needs; we ate well every day and finished the last bits as we returned.

The food supply was

53 Professor Morrison felt that the subject Mike had chosen for his term paper was not really worth studying.

The professor felt that the subject was

54 Lisa’s answer to the question was so superficial that it was obvious she had not read the assignment.

Superficial means

55 The brilliance of the planet Jupiter makes it easy to identify in the winter sky.

Jupiter’s brilliance makes it

56 “I don’t need to improve myself,” said Betty. “I like things just the way they are.”

Betty was

57 Advances in technology can be made far more easily than advances in society, and it is not unusual to see an incredibly modern manufacturing complex surrounded by wooden shanties.

Advances in technology and society are not

58 She coughed all day long, in summer as well as winter.

Her cough was
59. The painter received no grant, because the arts council, having received no government funds, had ceased to exist.

The council was
A. defunct.  B. derelict.
C. dissident.  D. delinquent.

60. For a sea creature to move quickly, streamlining must exist; otherwise, an impractical amount of energy is consumed in overcoming water resistance.

Streamlining means
A. combination of functions.
B. precision of movement.
C. reduction of size.
D. simplicity of contour.

STOP. If you finish before time is called, check your work on this part.
Do not go on to Part II or turn to any other test in this book.
Part II Comprehension-Directions

Read each passage carefully and then answer the questions on the basis of what is stated or implied in the passage.

Find the row of circles on your answer sheet that has the same number as the question. In this row, mark the circle that has the same letter as the answer you have chosen.

STOP. Wait for further directions.
The earliest practical lenses appeared in ancient Rome. Peering through a curved piece of glass, a Roman glassmaker noticed that the object at which he looked appeared larger. Others noticed that when a clear glass bowl was half filled with water, objects seen through the water were magnified. For a long while it was believed that water had the power to magnify. Then some early scientist, simply by placing the same water in a square vessel, demonstrated that the combination of water and a square glass vessel did not magnify. This proved that it was the curved glass which magnified, and a principle about lenses was available for the taking.

It was not until the thirteenth century, however, that spectacles were invented almost simultaneously in China and Europe. The Chinese placed their lenses in a pair of holders made from the shell of a tortoise. Since the tortoise was considered a sacred reptile, it was thought good luck to wear a pair of tortoise-shell rims, even without lenses.

The great output of printed matter which came after the invention of printing in 1440 sent people scurrying to the spectacle-makers. The spectacles they purchased were built on a simple universal formula—concave lenses for nearsightedness and convex for farsightedness. The buyer could choose from two strengths—strong for the old, weak for the young. For awhile it was customary to scratch into a corner of the lens a number which was to correspond roughly to the age of the wearer.

From How Much Do You Know About Glass? by Harlan Logan. Copyright 1951 by Harlan Logan. Reprinted by permission of Dodd, Mead & Company.

1. According to the passage, lenses first appeared in
   A. ancient Rome.
   B. thirteenth-century China.
   C. thirteenth-century Europe.
   D. fifteenth-century Europe.

2. The author implies that which of the following was the chief reason that the Chinese used tortoise shell in making spectacles?
   A. Fashion
   B. Superstition
   C. The durability of tortoise shell
   D. The availability of tortoise shell

3. It can be inferred that more people bought spectacles after printing was invented chiefly because
   A. spectacles were considered the mark of an educated person.
   B. spectacles had been improved greatly in the years since their invention.
   C. increased reading made them aware of deficiencies in their eyesight.
   D. spectacle-makers printed advertisements in newspapers and handbills.

4. Which of the following questions is NOT answered in the passage?
   A. How was the principle of lenses discovered?
   B. Why do objects seen through curved glass appear magnified?
   C. What kinds of faulty vision could be corrected through the use of early lenses?
   D. When were lenses first used in spectacles?

5. The author is primarily interested in which of the following?
   A. Discussing the process of making lenses
   B. Briefly reviewing the history of spectacles
   C. Examining superstitions connected with spectacles
   D. Explaining the magnifying properties of lenses

Go on to the next page.
6 On the basis of the information in the passage, which of the following most probably explains the persistence of the idea that water had the power to magnify?

A Water looks very much like glass, which does have the power to magnify.

B Water was more universally available than glass.

C Objects seen through empty, square glass containers were not magnified.

D Glass containers for water were usually curved rather than square.
The ancient Greeks must have made great music with their well-regulated scales and their lyres and flutes; every state occasion was graced with triumphant music. They made lovely songs, too, and were the first people in Europe to write these down. Above the words of their songs they wrote symbols to indicate the notes and the time. But fewer than a dozen of these songs remain.

Almost all the Greek melodies have disappeared, like the sound of the waves that beat against the Aegean shore or the wind that rustled through the olive trees so many centuries ago. But the principles of music that the Greeks "discovered" are the basis of our music today.

The truth they recognized, that music has power beyond our understanding, has remained, too. Truths have often been preserved in the form of legends, and this one about the power of music is embodied in the well-known legend of Orpheus.

Orpheus lived in the forests of Thrace, that wild, mountainous country that lay north of Greece. He played the lyre so beautifully that the listening forest creatures were charmed by his music. The shy ones came out of their hiding places and sat down before him; the wild ones were tamed.

In time Orpheus fell in love with the nymph Eurydice, and when she died he was stricken with grief. He went up and down through the forest playing music of such sadness that all who heard it wept.

At last his wandering took him to the border of Hades, and he entered the shadowy world, still playing his lyre. Then Pluto, the King of Hades, heard him, took pity on him, and agreed to let him have Eurydice again. He might lead her up to the world, and she might follow him, but he must not look back at her until they had left Hades behind him.

Joyfully the pair started—he leading and she following—and he played his lyre as they went. But when they had almost finished their journey, when they came to the boundary that divides the earth from Hades, Orpheus felt a misgiving lest Eurydice might not be there. Quickly he glanced over his shoulder and saw her snatched back into the shadows again.

Then Orpheus wandered through the world, mad with sorrow, and he paid no heed to anyone or anything. The women of Thrace, angered because he made no more music, set upon him and tore him to pieces.

The story of Orpheus has been told and retold and set to music. More operas have been written on its theme than on any other. And since the days of the ancient Greeks no better way has been found of telling of the incomprehensible power that music holds over the lives of men.

From The Heritage of Music by Katherine B. Shippen and Ana S. Edwards. Copyright © 1963 by Katherine B. Shippen and Ana S. Edwards. All rights reserved. Reprinted by permission of The Viking Press, Inc.

7 The author's attitude toward the music of the ancient Greeks is:
A indifferent.
B sorrowful.
C admiring.
D critical.

8 According to the passage, the ancient Greeks started which of the following musical practices?
A Playing music at state occasions
B Setting legends to music
C Preserving their songs in writing
D Combining the music of two instruments

9 The author relates the legend of Orpheus and Eurydice mainly to illustrate the
A ancient Greeks' extraordinary skill upon the lyre.
B beauty of ancient Greek legends.
C ancient Greeks' recognition of the power of music.
D primary source of ancient Greek songs.

Go on to the next page.
10 Why did Orpheus look back at Eurydice before they reached the border of Hades?
A He was afraid Eurydice was not behind him.
B He heard Eurydice fall.
C Eurydice called to him.
D Pluto tricked him into it.

11 The author makes which of the following statements about the legend of Orpheus and Eurydice?
I. It is the oldest legend in the world.
II. It is the best description in the world of the power of music.
III. It is the most famous legend in the world.
A I only
B II only
C II and III only
D I, II, and III

12 The murder of Orpheus by the women of Thrace is intended primarily to illustrate the
A cruelty of the ancient Thracian women.
B power that the love of music had over the ancient Thracian women.
C power that grief can have over people.
D cruelty of Pluto to those who disobey him.
Glass is made from silica, or sand. The fine grains of sand are really tiny quartz crystals, which will melt and turn to liquid when they are heated to more than 1,300 degrees Fahrenheit. This liquid is called glass, and while it is still soft and hot it can be twisted, flattened, blown into bubbles, or pressed into almost any shape.

Nature was making glass eons before man learned how. When lightning struck sand, it sometimes fused it into long strings of glass. The intense heat of volcanoes also fused sand into a natural glass called obsidian. Rock crystal, quartz, amethyst, agate, onyx, and jasper are other natural glasses.

Probably the first glass was made between 2000 B.C. and 3000 B.C., either in Syria or Egypt. Perhaps one of the ancient potters built up a higher temperature than usual in his kiln one day, and then noticed that the sand in the fire pit had fused. In any case, the heat needed to melt sand could only be achieved in a furnace. Primitive glassmakers melted sand in a crucible made of special heat-resisting clay, called fire clay.

The first glassmakers used any sand that was handy, and it usually contained iron and other impurities. The glass made from such sand was not transparent, but dull, cloudy, and streaked with spots where the mix had not melted properly. The glassworkers learned to look for beds of fine white silica with few impurities in it. They discovered that if they added a little soda ash and some broken glass, called cullet, to the mix, it melted faster and there was less damage to the crucible. Adding a little lime to the batch made the glass stronger and less brittle. Silica, soda, and lime were the three main ingredients of glass; they were cheap and plentiful. Even today ninety per cent of all glass is still made from this formula.

Many years later came a discovery that made it much easier to make objects from glass. For centuries glassmakers had used long iron rods to take a gob of glass from the furnace, and some of the rods must have been hollow, like pipes, for the sake of lightness. One day a workman, perhaps to clear his rod of a remnant of glass clinging to the end of it, blew into it, and found to his amazement that the glass gob puffed out like a bubble. Suddenly the tedious dipping of molds into liquid glass in order to make glass objects was bypassed; now the glassmakers could make any shape they wanted merely by blowing a bubble and then shaping it with paddles and pincers.

17 Based on the information in the passage, glass made from coarse, dark sand would be most likely to have which of the following characteristics?
   A The glass would be difficult to shape into objects.
   B The glass would be marked with imperfections.
   C The glass would do great damage to the crucible in which it was made.
   D The glass would be highly resistant to heat.

18 The author's main purpose is to
   A entertain.
   B instruct.
   C experiment.
   D persuade.
Who are the Vietnamese? We know, vaguely, that they descend from a non-Chinese, Mongoloid people who, in ancient times, left their tribal lands in south China and settled in the Red River country of what is now North Vietnam. Little else is clear. The origins of the Vietnamese, like those of all Southeast Asians, are obscure. Southeast Asia, a huge area lying between India and China, is a melting pot of peoples who have crossed and crisscrossed the continent for centuries. These migrations, in periodic waves and trickles, are still going on.

The early history of Vietnam is glorified by legend. Old tales tell of a Vietnamese kingdom in south China that existed three thousand years before the birth of Christ. Its name was said to be Van Lang, or Van Ta.xg, which means "country of the tattooed men." These stories are part of folklore, but some people still believe them to be true.

Chinese annals, dating from the pre-Christian era, are the first writings to mention the Vietnamese. In them we are told of a kingdom named Nam-Viet in the south of China, which was founded by Trieu Da, a rebel Chinese general, in 208 B.C. The members of the various tribes in that region were called Viets. Under Trieu Da, the Viets enlarged their domains by crossing the border southward into the northern part of today's Vietnam. The primitive people they found there they drove forcibly into the mountains.

The Viets found the new land to their liking. The soil was rich, and there was good hunting and fishing. In China, however, a warlike Han dynasty was beginning to press hard on Nam-Viet's south China preserves. The Viets were unable to resist this Chinese tide and were slowly pushed back into the sanctuary of the Red River country. For almost a hundred years, they fought off the relentless Han. In 111 B.C., they could hold out no longer. For one thousand years thereafter, the Vietnamese lived in bondage to their Chinese overlords.

Chinese occupation had a deep and long-lasting effect on Vietnam. Its people had been a simple farming, fishing, and hunting folk when the Chinese first came. Although they had already learned to make and use iron and bronze, their lives were crude and their culture primitive. They had become expert marksmen with the bow and arrow, which they used for hunting and for war.

Of farming the Viets knew little, except for some elementary methods of irrigation. On their farms they grew mostly cereal grains. The Chinese taught them to use the plow and the water buffalo. They also taught them the difficult art of rice planting and cultivation. In this way rice came to a land where it became the mainstay of life for its people.
22 On the basis of the information in the passage, why are the origins of all Southeast Asians obscure?
   A The countryside of Southeast Asia makes effective communication difficult.
   B The complex movements of the people make it difficult to trace their origins.
   C The true facts of the people's origins are found only in their folklore.
   D Southeast Asians are customarily secretive about their actions and ancestors.

   Until only Forget knows
   Where they are.
   Then comes a Springtime,
   Or maybe a Fall.

   (35) When you can't quite remember
   They happened at all.
   Days can go by,
   And weeks and years,
   Before your hand touches

   (40) Or your ear hears
   Or your eyes see
   Something that wakens
   A memory.
   Then what you forgot

   (45) Jumps up to say:
   "You saw me, or felt me
   Or heard me one day.
   Nothing that happens
   Goes truly away..."

   "Forget" from Words Words Words by Mary O'Neill.
   Copyright 1966 by Mary O'Neill. Reprinted by permission
   of Doubleday & Company, Inc.

23 When the brain talks to Forget in lines 11-12, it is
   A making a joke.
   B asking a question.
   C telling a secret.
   D giving a warning.

24 The main idea of the poem is that
   A we can never really forget things that happen to us.
   B it is hard to remember things even when we try.
   C we will be forgotten by others if we are naughty.
   D only the good things we have done will be remembered.

25 In this poem Forget is like
   A a season.
   B an idea.
   C a cape.
   D a person.
Gallantly saluting the trim English nursemaid, two pleasant Italian men stopped to speak to her and her little charge, a handsome boy of two years.

The men spoke fluent English, with just enough accent to make their speech fascinating to a young servant girl who had never before traveled on the Continent.

“Good morning!” they smiled. “And good morning to you, William. Or should we call you by your pet name, Bab?”

The maid had never seen the two men before, but the friendliness and charm of their manner disarmed her. The very fact that they knew little William’s nickname convinced her that they were good friends of her employers, the Gilberts.

She was not surprised or suspicious when one of the men remarked, “Mr. Gilbert asked us to tell you, if we happened to meet, that his wife wants the little boy at the hotel for a few moments. Some English friends have arrived who want to see him.” Then, as if a sudden thought had struck him, he added, “But you are having a pleasant stroll, and it’s such a lovely morning. Let us take him back to the hotel. We are on our way to breakfast there.”

The maid gladly gave the boy into the keeping of the strangers.

When the maid returned to the hotel and told her story, Mrs. Gilbert realized immediately that a kidnapping had taken place. In due course, a note reached the distracted parents in Naples. They might buy back their son, it read, for the sum of twenty-five pounds (about $125.00). The money was promptly given to the mysterious messenger, and William, who had received good care and who had, on the whole, enjoyed his excursion into the hills, was returned to his family as casually as he had been abducted.

When it was all over, the adventure seemed less serious than fantastic and charming. Everyone had to laugh at the small ransom figure, and Bab was teased for having been valued so cheaply.

Just what a good investment young William was, his family had no way of foreseeing. If the boy had not been captured by brigands, England would have lost a future humorist and playwright of great significance. This young William was to be the author of the most popular book of nonsense verse in the English language, the Bab Ballads, based on his childhood experience. More important still, he was to be associated with the English composer, Arthur Seymour Sullivan, in a collaboration that produced the wittiest and gayest comic operas ever written.

Adapted from Gilbert and Sullivan: Masters of Mirth and Melody by Claire Lee Purdy with the permission of Julian Messner, a division of Simon & Schuster, Inc. Copyright 1947 by Simon & Schuster, Inc.
28 It can be inferred that which of the following helped the nursemaid decide to let William go with the Italians?

I. The men knew William's nickname.
II. The men convinced her that they were friends of the Gilberts.
III. The men appeared to be gentlemen.

A I only
B I and III only
C II and III only
D I, II, and III

29 The author suggests that the kidnapping influenced William by

A making him famous.
B supplying him with an idea for a book.
C teaching him to endure adversity calmly.
D giving him an idea of his own worth.

30 William's English nursemaid can best be described as

A naive.
B superstitious.
C adventurous.
D conscientious.
Mechanics of Writing

Part I Spelling-Directions

In each group of words, find the misspelled word if there is one.

No group has more than one misspelled word.

If there is no misspelled word, the answer is D.

Find the row of circles on your answer sheet which has the same number as the group of words. In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE 1

A  monney
B  funny  Answer
C  sunny
D  no error

In this group of words, the misspelled word is A, so circle A is marked.

EXAMPLE 2

A  foe
B  low
C  sew  Answer
D  no error

There is no misspelled word in this group, so circle D is marked.

STOP. Wait for further directions.
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STOP. If you finish before time is called, check your work on this part.
Do not go on to Part II or turn to any other test in this book.

Go on to the next page.
Part II Capitalization and Punctuation-Directions

The following sentences contain problems in capitalization and punctuation.
In some sentences the punctuation or capitalization is incorrect.
You will find that the error, if any, is underlined and lettered.
If there is an error, select the one underlined part that must be changed to make the sentence correct.

No sentence contains more than one error.
If there is no error, the answer is D.
Find the row of circles on your answer sheet which has the same number as the sentence.
In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE 1
Jane Harris and I are joining the Girl Scouts.

A  B  C
No error    Answer
D

In this sentence, the underlined part lettered A is incorrect, so circle A is marked.

EXAMPLE 2
These books, flowers, and dolls are her's.

A  B  C
No error    Answer
D

In this sentence, the underlined part lettered C is incorrect, so circle C is marked.

EXAMPLE 3
Mr. Brown is going to Europe next week.

A  B  C
No error    Answer
D

There is no error in this sentence, so circle D is marked.
1 “I hope they’re not wasting my money on another piece of modern sculpture,” muttered the disgruntled taxpayer. No error

2 A visitor to FBI headquarters quickly senses the dedication of the employees that has become a Bureau tradition. No error

3 “John if you haven’t cleaned the cellar by ten o’clock, you may not go on the camping trip,” warned Tom. No error

4 “No, Mark isn’t at home now,” said Mrs. Roberts, “but I’ll have him call you when he returns.” No error

5 According to the American Heart association, fifty-four of every one hundred people who die in the United States this year will die of heart disease. No error

6 “I don’t mean to criticize your recipe, Jane, but three cups of flour seems like quite a bit,” said Aunt Millie. No error

7 The members of the Swedish-American Club were asked to wear costumes to the annual Folk Festival. No error

8 Beethoven’s first three piano sonatas, written in 1795, were dedicated to Joseph Haydn. No error

9 Independence Hall in Philadelphia Pennsylvania, is the scene of a celebration every Fourth of July. No error

10 Malraux’s first book was based largely on his personal experiences in China. No error

11 Next Summer Chuck will travel to California with a camping group. No error

Go on to the next page.
12 Bertolt Brecht, who came of age shortly before the First World War, suffered from the moral and physical indignities of its aftermath. No error.

13 Mr. Scott is a craftsman whose tools are his most valued possessions. No error.

14 Not until 1610 when Galileo developed a telescope, were men able to explore beyond our planet. No error.

15 Lincoln’s First inaugural Address is a plea for the rejection of violence in favor of change within the framework of the Constitution. No error.

16 According to the magazine article, “modern art involves a lot of hard salesman­ship to an unwilling public. No error.

17 The teacher asked whether anyone could explain why the moon often looks like a crescent? No error.

18 The capture in Arizona of the Apache leader, Geronimo, marked the end of effective Indian resistance. No error.

19 After the battle king Henry VI and his queen escaped north to Scotland, while Edward IV rode south to his coronation at Westminster. No error.

20 When reading the poetry of E. E. Cummings, one is struck by his unusual arrangement of words on the page and the peculiar uses of capitalization and punctuation. No error.

21 The life story of Anna Pavlova, the famous ballerina, is retold in a recent biography by P. D. Magriel. No error.

22 “The wood is too green.” “You won’t be able to start a fire with it,” advised the ranger. No error.

23 Once the population has grown so much that there is not enough food for anyone what will man do next? No error.
24 Miss London explained, "It's not correct to use the title 'Mister' when introducing yourself." No error

25 A harassed guide at the Smithsonian Institution was trying to explain the Principle of lightning to the noisy eighth-grade class. No error

26 "Yes, the remarkably lovely girl whom you have just described is my daughter," Uncle Jonas proudly answered. No error

27 On April 18, 1775, Paul Revere rode out from Boston, Massachusetts, to warn the people that the British were marching to Lexington and Concord. No error

28 "If they're not going to accept any more reservations," asked Bob, "why haven't they announced it?" No error

29 Though Hemingway's The snows of Kilimanjaro is rather depressing, I like it better than any of his other short stories. No error

30 Perhaps my grandmother painted the walls in her kitchen fire-engine red because she wanted to prove that she was still full of life. No error

31 Americans enjoy many different types of music but only jazz is wholly American. No error

32 It's not well known that Walt Whitman, who is best remembered as a poet, was a nurse during the Civil War. No error

33 We asked our camp counselor if she would read us another chapter of the mystery story. No error

34 In her autobiography, Stalin's Daughter reminisces about her father, his associates, and her life in Russia. No error

35 No other region in the world is so cold as the Antarctic, where winds up to 200 miles per hour howl through the perpetual night of winter. No error

Go on to the next page.
“Why?” the gardener asked himself. “Is this tree dying?” No error.

“The book has been translated into five languages, and we’re expecting it to be this year’s best seller,” said the boastful Editor. No error.

To create a work of art requires talent and originality; to copy a work of art requires only talent. No error.

When sticky buds appear on a tree or flower spikes emerge from the newly thawed ground, they seem to say, “Spring will come after all”. No error.

Who’s fault is it that the letters were not mailed until this week? No error.

The earliest cradles of Western civilization, Regions around the Mediterranean Sea, survived because barley, wheat, and millet were available. No error.

Mrs. Colwell, the twins’ aunt, has promised to take the boys to Washington for the Easter holidays. No error.

“Unless your grades improve Robert,” the counselor warned, “you’re not going to be admitted to medical school.”

“According to the legend”, said the old man, “the heavens received the seven sisters as stars, and they still shine there brightly.” No error.

The huge volume, supposedly containing a summary of all the existing knowledge about magic and the black arts, had lain on the dusty shelf for years. No error.

STOP. If you finish before time is called, check your work on Part II. Do not go back to Part I or turn to any other test in this book.
English Expression

Part I Directions

In each sentence find what is wrong, if anything.
If there is an error, decide which underlined part must be changed to make the sentence correct.
If there is no error, the answer is D.
Find the row of circles on your answer sheet which has the same number as the sentence. In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE 1
Betty done her homework and then went out to play. No error Answer D O © ®
In this sentence, the underlined part lettered A is incorrect, so circle A is marked.

EXAMPLE 2
The Chinese were the first to make eyeglasses. No error Answer D © ® ©
There is no error in this sentence, so circle D is marked.

STOP. Wait for further directions.
1. The librarian found that biographies are more popular with high school students than as adults. No error.

2. At the conference yesterday the government was asked to recognize the freedom to travel anywhere as a basic right that must not be denied our citizens. No error.

3. The rising waters of the Mississippi River become perilous when the level of the water has risen above the critical mark on the levees. No error.

4. About one half of the world’s coffee comes from Brazil, that has a climate well suited for growing coffee. No error.

5. When the Earl of Essex returned to London after a disastrous campaign in Ireland, the queen refused to see him. No error.

6. Passing by the hardware store, Arthur remembered that he would need another bag of cement before he would start work on the terrace. No error.

7. We thought it better to let John play by himself during his illness. No error.

8. John was real surprised when the audience cheered him as he ran onto the football field. No error.

9. In winter Venice is like a small town; even a petty theft makes headlines in the local newspaper. No error.

10. All adults ought to have hobbies that they enjoy, such as reading, hiking, or to garden. No error.

11. The leaders of the movement have no sympathy for them who believe in violence as a way of solving problems. No error.
12. It is not easy to learn an older person a foreign language. No error

13. Mr. Van Camp should of gone to the concert with us. No error

14. Because of his brilliant achievements in a variety of verse forms, Tennyson was appointed poet laureate. No error

15. The principal explained the plans for the new building to those parents which came in spite of the rain. No error

16. The kittens jumped on the chair and then laid down to sleep. No error

17. Ivan, like so many other immigrants, were surprised by certain habits typical of Americans. No error

18. As the book begins, the main character is facing a crowd of jeering men and awaiting for trouble. No error

19. Inspired by the spider’s unceasing efforts, Robert Bruce decided to continue his own struggle against the English. No error

20. Much to his dismay, the chairman of the planning commission received more than a dozen of objections to his proposal for a community swimming pool. No error

21. The chemist carefully sat the jar on the counter to allow the particles in the solution to settle. No error

22. Participating in too much extracurricular activities all at once often causes academic problems. No error

23. If one wishes to exercise power, he must also accept its responsibilities. No error

24. The chef explained that neither trout or salmon has the delicate flavor of a properly prepared shad. No error
25 Six of the nine major planets have one or more satellites, or moons, revolving around it. No error

26 The work of many men lie behind the development of the process by which steel is made from iron. No error

27 With great skill and apparent ease, the athlete hurled the discus far beyond the marks of those whom had tried before he did. No error

28 While lots of serious music may be intellectually stimulating, it often lacks melody. No error

29 We worked steadily for two hours, and rapidly made our way through several rows of corn. No error

30 When pressed, most men will acknowledge that political freedom is an ideal rather than an actuality. No error

31 Gamow is able to write about complex scientific matters in such simple language that could be understood by the general public. No error

32 Fortunately for Harris, neither the afternoon nor the evening paper contain an account of his arrest for drunken driving. No error

33 The lessons of history are often difficult to apply because even the most similar situations differ in some way. No error

34 By her lack in tact, Marie Antoinette helped to bring about her own downfall. No error

35 On the day before they are to perform, the actors rehearsed the play from morning till night. No error
36 Among Walter and I there developed a keen rivalry for election to the student senate. No error

37 When a conductor leads an orchestra as good as Leonard Bernstein does, he is often applauded by the members of the orchestra as well as by the audience. No error

38 The case against the defendant rested entirely upon circumstantial evidence. No error

39 The most exciting moment in the movie is where the hero captures the enemy soldiers. No error

40 By the end of the novel, Gatsby not only has lost everything that he has striven for, but also he lost his life in pursuit of a dream. No error

STOP. If you finish before time is called, check your work on this part. Do not go on to Part II or turn to any other test in this book.
Part II Directions

Beneath each sentence you will find four ways of writing the underlined part.

Choose the answer that makes the best sentence. Then find the row of circles on the answer sheet that has the same number as the sentence. In that row mark the circle having the same letter as the answer you have chosen.

Answer A is always the same as the underlined part and is sometimes the correct answer.

EXAMPLE 1

Where did you leave your baseball at?
A Where did you leave your baseball at?
B Where at did you leave your baseball?
C Where did you leave your baseball by?
D Where did you leave your baseball?

Answer D makes the best sentence in this example, so circle D is marked.

EXAMPLE 2

Since Jean's bicycle was broken, Hank gave her his to use on the Girl Scout hike.
A gave her his to use
B give her his to use
C gave her his for using
D shall have given her his for using

Since answer A makes the best sentence, circle A is marked.

STOP. Wait for further directions.
Part II|20 minutes|20 questions

1. Mr. Baker went into his new office, tested the chair, and he called his secretary on the new intercom.
   A and he called
   B then he called
   C and called
   D then calls

2. Although Professor Martin's favorite novel is *Of Human Bondage*, Maugham is not a favorite author for him.
   A Maugham is not a favorite author for him
   B his favorite is not the author Maugham
   C Maugham is not, for him, a favorite author
   D Maugham is not his favorite author

3. Washington fought against many British generals, but he respected Cornwallis as the craftiest of them all.
   A craftiest of them all
   B craftiest of those he fought
   C craftier of the generals
   D most crafty one there was

4. Wartime is when many products become scarce.
   A Wartime is when
   B During when a war is on
   C War is when
   D In wartime

5. The prince mounted his white charger, riding out to battle the dragon.
   A charger, riding
   B charger and rode
   C charger, then he rode
   D charger, to ride

6. Bill, my closest friend, he could hardly deliver his papers during the blizzard.
   A he could hardly
   B could hardly
   C he could not hardly
   D could not hardly

7. His finger pointing in the direction of the flute, the instructor said to the student to try the exercise again.
   A instructor said to the student
   B student was told by the instructor
   C instructor told the student
   D student was, said the instructor,

8. Giraffes usually sleep standing up because the effort required to lie down and get up again makes the reclining giraffe an easy target for lions.
   A to lie down and get up again
   B for lying down and again getting up
   C to lie down and getting up again
   D for them lying down and getting up again

9. Wyeth's pictures, unlike Klee, have always had recognizable subjects.
   A unlike Klee
   B unlike Klee's
   C different than Klee's
   D who is different from Klee

10. During the finale, the violins were unified in playing.
    A the violins were unified in playing
    B the violins were played in union
    C there was unity in the violin playing
    D the violinists played in unison

11. Tom could, through his field glasses, see the birds building their nests, twig by twig.
    A Tom could, through his field glasses, see
    B Through his field glasses, Tom could see
    C Tom could see through his field glasses
    D Tom, through his field glasses, could see

Go on to the next page.
12 If lacking intellectual freedom, we cannot achieve the ends to which our society is dedicated.
   A If lacking
   B Except for
   C Without
   D With a lack of

13 The vocabulary of the English language includes a fascinating collection of borrowings from many other languages.
   A of borrowings from
   B in borrowing of
   C of borrowings of
   D that is borrowed from

14 Archaeologists believe that the Indians could have crossed into North America across the Bering Strait, a narrow body of water between Asia and the North American continent.
   A across the
   B in using the
   C by way of the
   D by crossing the

15 If you practice these kind of exercises, you will develop your muscles.
   A these kind of exercises, you will develop your muscles
   B this kind of exercise, one's muscles will be developed
   C this kind of exercise, you will develop your muscles
   D these kinds of exercises, one will develop one's muscles

16 The animal whose winter coat we call ermine is no other but the ordinary weasel.
   A no other but
   B no different than
   C no different to
   D none other than

17 All the pilots except one has returned safely from the mission.
   A All the pilots except one has returned
   B Only one of the pilots have not returned
   C Of all of them, only one pilot has not returned
   D All but one of the pilots have returned

18 Because of his popularity, George Washington found it difficult to avoid being crowned king of the United States.
   A to avoid
   B avoiding
   C in how to avoid
   D in how he had to avoid

19 In theory, the officers of the juvenile court are concerned more with rehabilitation instead of punishment.
   A instead of
   B but not at
   C than with
   D as with

20 In panning for gold, a shallow pan is filled with silt and water from a stream and then you rotate it gently just below the surface of the flowing water.
   A then you rotate it
   B then rotate
   C then rotate it
   D then rotated

STOP. If you finish before time is called, check your work on Part II. Do not go back to Part I or turn to any other test in this book.
APPENDIX B

"EDUCATIONAL RECORDS BUREAU
COMPREHENSIVE TESTING PROGRAM APTITUDE ACHIEVEMENT TEST"

LEVEL 5 - FORM A
GENERAL DIRECTIONS:

This is a test of your abilities and some of the skills and understandings you have been developing in school. Your score will be the total number of correct answers you mark. Wrong answers will not be counted against you.

Do not spend too much time on any one question. If a question seems to be too difficult, make the most careful guess you can.

Mark your answers on the separate answer sheet. Mark only one answer for each question. If you want to change an answer, erase your first mark completely.

Do not open this booklet until you are told to do so.
Part I Verbal-Directions

Each question begins with two words. These two words go together in a certain way. Under them, there are four other pairs of words lettered A, B, C, and D.

Find the lettered pair of words that go together in the same way as the first pair of words.

Then, find the row of circles on your answer sheet which has the same number as the question. In this row of circles, mark the letter of the pair of words you have chosen.

See how these examples are marked:

EXAMPLE 1

calf : cow ::
A puppy : dog
B nest : bird
C horse : bull
D shell : turtle

In the first pair of words (calf : cow), calf goes with cow in this way—a calf is a young cow.

The only lettered pair of words that go together in the same way is puppy : dog. A puppy is a young dog.

Circle A is marked because the letter in front of puppy : dog is A.

EXAMPLE 2

minute : second ::
A time : clock
B mile : travel
C hour : measure
D foot : inch

In the first pair of words (minute : second), minute goes with second in this way—a minute is made up of seconds.

The only lettered pair of words that go together in the same way is foot : inch. A foot is made up of inches.

Circle D is marked because the letter in front of foot : inch is D.

STOP. Wait for further directions.
Part I: 20 minutes; 50 questions

1 wrong : corrected ::
A crooked : straightened
B unbalanced : destroyed
C misplaced : discarded
D suspected : proved

2 hearing aid : ears ::
A spectacles : eyes
B braces : teeth
C cast : legs
D ointments : wounds

3 dock : ships ::
A vehicle : trains
B skyscraper : offices
C garage : automobiles
D track : horses

4 leather : shoe ::
A zipper : dress
B wool : sweater
C varnish : wood
D ring : jewelry

5 pluck : chicken ::
A cut : plant
B shear : lamb
C erase : word
D skin : fur

6 cigarette : tobacco ::
A vase : flower
B pipe : smoke
C window : view
D pencil : lead

7 bicker : argue ::
A bother : insult
B tease : annoy
C enjoy : dislike
D know : disagree

8 crowbar : prying ::
A knife : sharpening
B cup : measuring
C pulley : weighing
D jack : lifting

9 starch : stiffens ::
A soap : polishes
B detergent : softens
C catalyst : spoils
D bleach : whitens

10 sole : foot ::
A elbow : arm
B thumb : finger
C face : head
D palm : hand

11 proofreader : manuscript ::
A supervisor : factory
B inspector : product
C sentry : fortress
D official : card

12 mastodon : mammal ::
A unicorn : horse
B dodo : robin
C dinosaur : reptile
D tiger : leopard

13 butt : head ::
A kick : foot
B grasp : hand
C kneel : knee
D twist : ankle

14 fore : golfer ::
A hello : operator
B halt! : referee
C attention! : teacher
D timber! : lumberjack

15 charter : vehicle ::
A hire : worker
B appoint : official
C designate : person
D rent : purchase

16 arid : dry ::
A tepid : cold
B limpid : heavy
C vapid : watery
D humid : damp

17 profane : language ::
A unsociable : situation
B rude : manner
C happy : mood
D sacred : ritual

18 whittling : woodworking ::
A assignment : homework
B polishing : leatherwork
C embroidery : needlework
D basketball : team work

19 tall : height ::
A far : distance
B light : weight
C solid : color
D short : time

20 playwright : drama ::
A teacher : class
B composer : symphony
C carpenter : wood
D conductor : sonata

21 moderate : extreme ::
A ordinary : exceptional
B transparent : opaque
C mild : lukewarm
D unusual : rare

22 farmer : crops ::
A shepherd : flocks
B milkman : bottles
C gardener : soil
D butcher : animals

23 bale : cotton ::
A paddy : rice
B sheaf : wheat
C blossom : fruit
D limb : leaf

24 poor : insolvent ::
A wealthy : bankrupt
B interested : elated
C joyful : unhappy
D sick : unhealthy
25 forger : writes ::
A fraud : talks
B imposter : acts
C swindler : fakes
D saboteur : plans

33 picket : fence ::
A vine : trellis
B soil : shrubbery
C patio : terrace
D flagstone : walk

41 procedure : activity ::
A diplomacy : tact
B itinerary : journey
C minutes : committee
D index : hook

26 faculty : teachers ::
A alumni : graduates
B roster : members
C personnel : students
D agenda : officers

34 surveyor : measurements ::
A mechanic : automobiles
B carpenter : nails
C photographer : pictures
D architect : buildings

42 christen : ship ::
A cultivate : crop
B found : company
C entitle : book
D employ : worker

27 war : truce ::
A activity : spurt
B rout : attack
C detour : halt
D storm : lull

35 scuffed : shoe ::
A ruffled : collar
B frayed : shirt
C lined : coat
D mended : seam

43 prairie : mountains ::
A valley : slope
B desert : water
C brook : stream
D river : bed

28 exotic : native ::
A foreign : domestic
B mysterious : unknown
C international : universal
D secret : quiet

36 laryngitis : voice ::
A neuritis : emotion
B paralysis : movement
C appendicitis : abdomen
D arthritis : arm

44 air pressure : barometer ::
A mileage : odometer
B examination : grade
C poll : interview
D distance : speedometer

29 revise : delete ::
A begin : dispel
B attach : dislodge
C alter : discard
D spread : disperse

37 atomizer : perfume ::
A nozzle : water
B shovel : dirt
C bottle : milk
D pouch : tobacco

45 preference : choose ::
A donation : hoard
B challenge : accept
C emotion : think
D aversion : reject

30 calendar : day ::
A diary : page
B clock : second
C ruler : length
D timer : buzz

38 spot : smudge ::
A mud : puddle
B puncture : rip
C voice : word
D circle : ball

46 extol : praise ::
A punish : crime
B debase : slander
C reward : money
D concern : sympathy

31 fur : mink ::
A glass : pane
B textile : design
C leather : suede
D wood : paper

39 deal : cards ::
A ask : question
B sow : crops
C bet : horse
D serve : food

47 raze : building ::
A sow : seed
B graft : plant
C fell : tree
D open : door

32 speaker : orator ::
A executive : secretary
B intern : nurse
C laborer : craftsmen
D lawyer : client

40 plagiarize : idea ::
A hide : manuscript
B steal : thief
C embezzle : money
D lose : object

48 candid : blunt ::
A mysterious : obvious
B emphatic : undecided
C open : secretive
D reserved : aloof

Go on to the next page.
49 scroll : parchment ::
   A ink : pencil
   B book : page
   C bolt : cloth
   D binding : glue

50 invent : machine ::
   A publish : book
   B coin : word
   C attempt : feat
   D approve : law

STOP. If you finish before time is called, check your work on this part.
Do not go on to Part II or turn to any other test in this book.
Part II Quantitative-Directions

Each of the following questions has two parts. One part is in Column A. The other part is in Column B.

You must find out if one part is greater than the other, or if the parts are equal, or if not enough information is given for you to decide.

Then, find the row of circles on your answer sheet which has the same number as the question. In this row of circles, mark:

A if the part in Column A is greater.
B if the part in Column B is greater.
C if the two parts are equal.
D if not enough information is given for you to decide.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE 1</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>The part in Column A (10) is greater than the part in Column B (9). Circle A is marked because the part in Column A is greater.</td>
<td></td>
</tr>
<tr>
<td>EXAMPLE 2</td>
<td>2</td>
<td>1 + 2</td>
</tr>
<tr>
<td></td>
<td>The part in Column B (1 + 2) is greater than the part in Column A (2). Circle B is marked because the part in Column B is greater.</td>
<td></td>
</tr>
<tr>
<td>EXAMPLE 3</td>
<td>The value of 5 cents</td>
<td>The value of 1 nickel</td>
</tr>
<tr>
<td></td>
<td>The part in Column A is 5 cents. The part in Column B (1 nickel) is also equal to 5 cents. Circle C is marked because the parts are equal.</td>
<td></td>
</tr>
<tr>
<td>EXAMPLE 4</td>
<td>x</td>
<td>y</td>
</tr>
<tr>
<td></td>
<td>There is an x in Column A and a y in Column B. You are not told what numbers x and y represent. Therefore, you can not tell which part is greater, or if the two parts are equal. Circle D is marked because not enough information is given for you to decide.</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Letters such as x, n, and k stand for real numbers. If the same letter appears in both columns of a question, it stands for the same number.

STOP. Wait for further directions.
Part II: 20 minutes; 50 questions

A The part in Column A is greater.
B The part in Column B is greater.
C The two parts are equal.
D Not enough information is given to decide.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 .999</td>
<td>1.001</td>
</tr>
<tr>
<td>Rectangle PQRS</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 Length of PR</th>
<th>Length of QS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Number of ounces in ( \frac{3}{4} ) pound</td>
<td></td>
</tr>
<tr>
<td>4 .520</td>
<td>.052</td>
</tr>
<tr>
<td>5 Number of trees in an apple orchard if there are 8 trees in a row</td>
<td></td>
</tr>
<tr>
<td>6 Value of ( z ) if ( 2 - z = 5 )</td>
<td></td>
</tr>
<tr>
<td>7 2 yards 2 feet + 1 yard 2 feet</td>
<td></td>
</tr>
<tr>
<td>8 .757</td>
<td>.7</td>
</tr>
<tr>
<td>9 Distance PR minus distance PQ on line PS above</td>
<td></td>
</tr>
<tr>
<td>10 ( \frac{2}{3} )</td>
<td></td>
</tr>
<tr>
<td>11 A distance of 100 feet</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Area of shaded region of the large square</td>
<td>Sum of the areas of unshaded regions of the large square</td>
</tr>
<tr>
<td>13 ( 2 \times z )</td>
<td>( 3 \times y )</td>
</tr>
<tr>
<td>14 Area of region A above</td>
<td>Area of region B above</td>
</tr>
<tr>
<td>15 Number of days in month A</td>
<td>30 days</td>
</tr>
<tr>
<td>16 Smallest even number greater than 2</td>
<td>Largest even number less than 4</td>
</tr>
<tr>
<td>17 The age of the United States 100 years before 1900</td>
<td>The age of the United States 50 years before 1900</td>
</tr>
<tr>
<td>18 ( N ) if ( 2N + 1 = 11 )</td>
<td>( M ) if ( 2M - 1 = 11 )</td>
</tr>
<tr>
<td>19 ( 2 \times 4 )</td>
<td>( 2 \times \pi )</td>
</tr>
<tr>
<td>20 ( (1)^3 )</td>
<td></td>
</tr>
<tr>
<td>21 The cost of 10 yards of denim</td>
<td>The cost of 15 yards of gingham</td>
</tr>
<tr>
<td>Column A</td>
<td>Column B</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>J and M are the heights in inches of John and Mary, respectively:</strong></td>
<td><strong>J - M = 2 inches</strong></td>
</tr>
<tr>
<td><strong>22 The height of John</strong></td>
<td><strong>The height of Mary</strong></td>
</tr>
<tr>
<td><img src="image1" alt="" /> 6 ft.</td>
<td><img src="image2" alt="" /> 8 ft.</td>
</tr>
<tr>
<td><strong>23 Area of this parallelogram</strong></td>
<td><strong>24 100 \times 100 \times 100 = 1,000 \times 1,000</strong></td>
</tr>
<tr>
<td><strong>25 Area of a circle with radius 4 feet</strong></td>
<td><strong>26 Area of a circle with diameter 4 feet</strong></td>
</tr>
<tr>
<td><strong>27 Perimeter of a rectangle with width of 2 feet and length of 3 feet</strong></td>
<td><strong>28 The value of a number if half of it is 2</strong></td>
</tr>
<tr>
<td><strong>29 100 + \frac{4}{3} = 100 + \frac{3}{4}</strong></td>
<td><strong>29 The value of a number if half of it is 2</strong></td>
</tr>
<tr>
<td><strong>30 Perimeter of a triangle</strong></td>
<td><strong>30 Perimeter of a rectangle</strong></td>
</tr>
<tr>
<td><strong>31 The number of multiples of 6 from 1 through 1,000</strong></td>
<td><strong>31 The number of multiples of 7 from 1 through 1,000</strong></td>
</tr>
<tr>
<td><strong>32 Distance from P to Q in the cube above</strong></td>
<td><strong>32 Distance from P to R in the cube above</strong></td>
</tr>
<tr>
<td><strong>33 Length a in triangle above</strong></td>
<td><strong>34 x \text{ if } \frac{x}{2} = 1 = 1</strong></td>
</tr>
<tr>
<td><strong>35 The sum of the remainders when each of these is divided by 5: 10, 15, 20</strong></td>
<td><strong>35 The sum of the remainders when each of these is divided by 5: 10, 15, 20</strong></td>
</tr>
</tbody>
</table>

Use this graph for Questions 36-38.

**AVERAGE DAILY TEMPERATURES FOR ONE WEEK**

<table>
<thead>
<tr>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>Sa</th>
<th>Su</th>
</tr>
</thead>
<tbody>
<tr>
<td>80°</td>
<td>70°</td>
<td>60°</td>
<td>50°</td>
<td>40°</td>
<td>30°</td>
<td>20°</td>
</tr>
<tr>
<td>10°</td>
<td>10°</td>
<td>10°</td>
<td>10°</td>
<td>10°</td>
<td>10°</td>
<td>10°</td>
</tr>
</tbody>
</table>

**36 Temperature of the lake on Monday** | **37 Temperature of the lake on Saturday** |
| Temperature of the air on Monday | Temperature of the air on Saturday |

**38 Temperature of the air 6 days after the air and lake have the same temperature** | **38 Temperature of the lake 2 days before the air and lake have the same temperature**

---

Go on to the next page.
A The part in Column A is greater.
B The part in Column B is greater.
C The two parts are equal.
D Not enough information is given to decide.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>39</strong> The digit that goes in □</td>
<td>The digit that goes in △</td>
</tr>
<tr>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>×□6</td>
<td>×4△</td>
</tr>
<tr>
<td>1.058</td>
<td>1.058</td>
</tr>
</tbody>
</table>

**Area** of the circle above with center at O

R, S, and T are consecutive whole numbers in increasing order.

**40** Area of the circle above with center at T

**41** S

**42** An area of 2 square yards

**43** \( x + y \)

\( P0 \) is a straight line.

**44** The volume of the box above

**45** The area of the regular eight-sided figure above

**46** \( 1.000 - .001 \)

**47** Length of heavy line \( (6 \times H) + (3 \times L) \) line

A pie is divided into \( x \) pieces with \( y \) cuts from the center of the pie.

**48** \( x \)

\( x \) is less than \( \frac{x + y}{3} \)

**49** \( x \)

\( x \) is less than \( \frac{x + y}{3} \)

Two digits are blotted out in this problem:

\( \overline{5. \_ \_ \_ 6 \times 278} \)

**44** The volume of the box above

**46** \( 1.0000 - .0001 \)

**47** Length of heavy line \( (6 \times H) + (3 \times L) \)

A pie is divided into \( x \) pieces with \( y \) cuts from the center of the pie.

**48** \( x \)

\( x \) is less than \( \frac{x + y}{3} \)

**49** \( x \)

\( x \) is less than \( \frac{x + y}{3} \)

Two digits are blotted out in this problem:

\( \overline{5. \_ \_ \_ 6 \times 278} \)

**50** The product above 142,508

STOP. If you finish before time is called, check your work on Part II.
Do not go back to Part I or turn to any other test in this book.
Mathematics Basic Concepts

Directions

Each question in this test is followed by four suggested answers.
Read each question and then decide which one of the four suggested answers is best.
Find the row of circles on your answer sheet which has the same number as the question. In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE
A 48-inch rope was shortened by cutting 2 inches from each end. How long is it now?

A 44 inches  
B 45 inches  
C 46 inches  
D 47 inches

The correct answer to this question is lettered A, so circle A is marked.

Note: Figures which accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that its figure is not drawn to scale. All figures lie in the plane unless otherwise indicated.
In this test, all numbers used are real numbers.

STOP. Wait for further directions.
1. If $\frac{x}{7} = \frac{10}{14}$ then $x = \text{?}$
   A $\frac{5}{7}$   B $5$   C $\frac{5}{2}$   D $20$

2. College X Job Registration

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>251</td>
</tr>
<tr>
<td>Sophomore</td>
<td>249</td>
</tr>
<tr>
<td>Junior</td>
<td>260</td>
</tr>
<tr>
<td>Senior</td>
<td>227</td>
</tr>
</tbody>
</table>

If the name of one of the students in the classes above is chosen at random for a certain job, then that student will most likely be a

3. In which equation is $S$ directly proportional to $r$?
   A $S = r$   B $S = \frac{1}{r}$   C $S = r + 1$   D $S = r - 1$

4. Each of the following is a factor of 210 EXCEPT
   A 6   B 15   C 18   D 42

5. On the number line above, which point is halfway between 1 and 9?
   A 3   B 4   C 5   D 5

6. If the area of the black triangle above is 32, then the area of the parallelogram is
   A 64   B 48   C 16   D 8

7. Which statement is FALSE?
   A $4 \times 9 = 9 \times 4$
   B $43 - 28 = 28 - 43$
   C $5(4 + 9) = (5 \times 4) + (5 \times 9)$
   D $(5 \times 4) \times 9 = 5 \times (4 \times 9)$

8. In the plane of a circle with radius of 4.3 inches, if a point $P$ lies 4.03 inches from the center of the circle, then $P$ lies
   A inside the circle but not at the center.
   B at the center of the circle.
   C on the circle.
   D outside the circle.

9. If $n - 9 < 15$, then $n$ can be
   A any real number greater than 24.
   B any real number less than 24.
   C any real number greater than 6.
   D 24 only.

10. Of the products above, which is greatest?
    A 254
    B 2.84
    C 28.4
    D They are all equal
11 Which of the following gives a correct ordering of the fractions $\frac{3}{4}$, $\frac{4}{5}$, and $\frac{2}{3}$?
A $\frac{3}{4} < \frac{2}{3} < \frac{4}{5}$
B $\frac{2}{3} < \frac{3}{4} < \frac{4}{5}$
C $\frac{2}{3} < \frac{4}{5} < \frac{3}{4}$
D $\frac{4}{5} < \frac{3}{4} < \frac{2}{3}$

12

On the number line above, the product $PQ$ could equal
A 1
B 0
C -1
D -4

13 At South High School 60 percent of the student body attended the school play. If 360 members of the student body attended the play, what was the student enrollment at South High School?
A 216
B 600
C 720
D 6,000

14 Which of these expressions are names for 0?
I. $x + (-x)$
II. $-(-x)$
III. $0(x)$
A I only
B II only
C III only
D I and III only

15 Questions 15-17 refer to the following graph.

What are the coordinates of point $P$?
A $(120, 60)$
B $(120, 2)$
C $(4, 2)$
D $(60, 120)$

16 Which of the following equations describes the relationship between $q$ and $m$?
A $q = \frac{m}{60}$
B $q = \frac{m}{2}$
C $q = m$
D $q = 60m$

17 For any point $(m, q)$ on the graph, if $m$ represents a number of minutes, then $q$ represents the equivalent number of
A seconds
B hours
C days
D weeks

18 $(921)^2 =$
A 848,240
B 848,241
C 848,242
D 848,243

19 If three of the following statements are true, which statement is FALSE?
A $z > y$
B $z > x$
C $x > y$
D $y > z$

20 A boy 6 feet tall notes that his shadow on level ground is 18 feet long, while the shadow of a tall building is 1,500 feet long. What is the height of the building?
A 250 feet
B 500 feet
C 1,000 feet
D 4,500 feet

Go on to the next page.
21. At the rate of 528 miles in 1/2 hours, how many miles will a plane fly in 5 1/2 hours?
   A 15280  B 2178
   C 2904  D 3372

22. In right \( \triangle ABC \) above, if \( AD = 4 \) and \( DB = 6 \), then \( CD = \)
   A 3  B \( 2\sqrt{3} \)
   C \( 2\sqrt{2} \)  D 5

23. If \( (x - a)(x - b) = (x - 3)y \) and \( x \neq 3 \), then \( y = \)
   A 1  B \( a \)
   C \( x - a \)  D \( a - x \)

24. If the two triangles above are congruent, which of the following must be true?
   A \( AB = DE \)  B \( AC = CE \)
   C \( AC = CD \)  D \( AB = BC \)

25. A galaxy is \( 2.4 \times 10^6 \) light-years away. How many light-years is half this distance?
   A \( 2.4 \times 10^4 \)
   B \( 2.4 \times 5^6 \)
   C \( 1.2 \times 10^6 \)
   D \( 1.2 \times 5^3 \)
29 If twice a number $N$ is multiplied by 5 and the product is divided by 10, the result is $\frac{1}{2}$. What is $N$?
A $\frac{1}{10}$  B $\frac{1}{2}$  C 1  D 2

30 The average of four numbers is 17. If a fifth number is included, the new average is 18. The fifth number is
A 12  B 18  C 22  D 32

31 If $x$ is a prime number greater than 2, which of the following is an odd number?
A $x(x - 1)$  B $x(x + 1)$  C $(x + 1)(x - 2)$  D $(x - 2)(x + 2)$

32 $(-1)^3 =$
A -13  B -1  C $\frac{1}{2}$  D 1

33 On an evenly graduated ruler, if the distance between any mark and the one next to it is $\frac{1}{4}$ inch, then the greatest possible error of measurement using this ruler is
A $\frac{1}{4}$ inch.  B $\frac{1}{2}$ inch.  C $\frac{3}{4}$ inch.  D 1 inch.

34 In which quadrants of the coordinate plane does the line whose equation is $y = 4$ lie?
A I and II only  B I and IV only  C II and III only  D II and IV only

35 \[2.54 \text{ centimeters} = 1 \text{ inch}
1 \text{ centimeter} = 10 \text{ millimeters}
10 \text{ centimeters} = 1 \text{ decimeter}

According to the table above, 2.54 decimeters equal how many inches?
A 1  B 2.54  C 10  D 25.4

36 If $x^2 - 5x = 0$, then $x$ can be
A 0 only  B 5 only  C 0 or $-5$  D 0 or 5

Questions 37-40 refer to the following graph.

37 The number of refrigerators per 1,000 persons in Country X was approximately what percent of the number of refrigerators per 1,000 persons in the United States?
A 10 percent  B 20 percent  C 30 percent  D 930 percent

38 For which consumer product was the ratio of the number per 1,000 persons in the United States to the number per 1,000 persons in Country X the greatest?
A Automobiles  B Television sets  C Refrigerators  D Washing machines

39 If the population of Country X was 230 million, then the number of washing machines in Country X was approximately
A 50,820  B 1,500,000  C 4,600,000  D 11,500,000

40 In Country X, the number of automobiles was how many times the number of washing machines?
A 2  B 2  C 5  D 22

Go on to the next page.
41. In the figure above, if $AB \parallel DE$, then $y + z =$
A. 60
B. 120
C. 150
D. 180

42. If the volume of cube $A$ is 3 times the volume of cube $B$, the length of an edge of $A$ is how many times the length of an edge of $B$?
A. $\frac{1}{3}$
B. $\frac{\sqrt[3]{3}}{3}$
C. 3
D. 27

43. The sum of the fractions $\frac{b}{a}$ and $\frac{d}{c}$ is
A. $\frac{bc + ad}{ac}$
B. $\frac{ad + bc}{a + c}$
C. $\frac{b + d}{a + c}$
D. $\frac{b + d}{ac}$

44. The graph of which of the following equations is perpendicular to the graph of the equation $y = 2x - 1$?
A. $y = 2x$
B. $y = 2x + 1$
C. $y = -2x$
D. $y = -\frac{1}{2}x$

Questions 45-47 refer to the following graph.

45. The expenditure for daily newspaper advertising was approximately what percent of the expenditure for direct mail advertising?
A. 5 percent
B. 25 percent
C. 40 percent
D. 400 percent

46. What is the ratio of expenditures for daily newspaper advertising to expenditures for magazine advertising?
A. $\frac{1}{2}$
B. $\frac{1}{3}$
C. $\frac{1}{4}$
D. $\frac{1}{5}$

47. Of the following, which is the closest approximation to the amount Company C spent on miscellaneous advertising?
A. $9,000
B. $11,000
C. $90,000
D. $110,000

48. If a boy who is $x$ years old now is twice the age of his sister, how old will his sister be 5 years from now?
A. $(2x + 10$) years
B. $(\frac{x}{2} + 5)$ years
C. $(2x + 5)$ years
D. $(\frac{x + 5}{2})$ years
49 If four true statements about a number \( x \) are learned in the following order, after which statement can it first be concluded that \( x \) is an integer?

A. \( x \) is a real number
B. \( x \) is equal to \( \frac{a}{b} \) where \( a \) and \( b \) are integers and \( b \neq 0 \)
C. \( b \) is equal to 1
D. \( a = \sqrt{c} \) where \( c \) is an integer

STOP. If you finish before time is called, check your work on this test.
Do not turn to any other test in this book.
Mathematics Computation

Directions

Each problem in this test is followed by four suggested answers.
Read each problem and then decide which one of the four suggested answers is correct.
Find the row of circles on your answer sheet which has the same number as the problem.
In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE

\[
\begin{array}{c}
54 \\
-48
\end{array}
\]

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>102</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Answer

\[\circ \circ \circ \circ\]

The correct answer to this problem is lettered A, so circle A is marked.

STOP. Wait for further directions.
40 minutes, 60 questions

1. $1025.20 - $578.75 =
   - A $436.45
   - B $436.55
   - C $446.45
   - D $446.55

2. If $4x + 5 = 17$, then $x =
   - A 3
   - B 4
   - C 4 1
   - D 5 2

3. $8 - 6 1$
   - A 1 1
   - B 1 2
   - C 2 1
   - D 2 2

4. $5 \times 5 \frac{5}{6} =$
   - A 1 4
   - B 4 1
   - C 5 1
   - D 5 2

5. $0.69897 + 0.47112 =$
   - A 1.07609
   - B 1.16809
   - C 1.17609
   - D 1.17619

6. \[
   \frac{(\frac{1}{4} + \frac{3}{4}) + \frac{1}{4} + \frac{3}{4}}{\frac{1}{3} + \frac{5}{3} + \frac{1}{3} + \frac{3}{3}} =
   \]
   - A $\frac{3}{2}$
   - B $\frac{2}{3}$
   - C $\frac{1}{4}$
   - D $\frac{1}{3}$

7. \[ - 209 =
   \]
   - A 4,794
   - B 3,894
   - C 3,804
   - D 3,794

8. $789 \times 206 =
   - A 20,514
   - B 152,524
   - C 162,534
   - D 1,582,734

9. Of the following, which is greatest?
   - A $7 \times 9$
   - B $6 \times 8$
   - C $5 \times 11$
   - D $4 \times 13$

10. $\frac{1}{4} + \frac{1}{7} =$
    - A $\frac{1}{4}$
    - B $\frac{1}{11}$
    - C $\frac{7}{11}$
    - D $\frac{13}{11}$

11. $1.2 + .04 + 56 + .28 =$
    - A 57.52
    - B 57.42
    - C 57.34
    - D 10.00

12. $\frac{2}{3} - \frac{2}{9} =$
    - A $\frac{1}{4}$
    - B $\frac{1}{3}$
    - C $\frac{3}{6}$
    - D $\frac{1}{4}$

13. $\frac{25069}{302} =$
    - A 88 remainder 13
    - B 93 remainder 3
    - C 818 remainder 13
    - D 903 remainder 3

14. $2 \frac{3}{4} + 3 \frac{1}{4} =$
    - A $\frac{5}{4}$
    - B $\frac{5}{3}$
    - C $\frac{6}{3}$
    - D $\frac{6}{7}$

15. $5(4^2 - 3^2) =$
    - A 900
    - B 525
    - C 36
    - D 24

16. 3.362 rounded to the nearest hundredth is
    - A 3.38
    - B 3.386
    - C 3.39
    - D 3.4

17. The average of 5, 0, 20, 9, and 26 is
    - A 15
    - B 12
    - C 10
    - D 0

18. $\frac{491.85}{100} =$
    - A 49.186
    - B 4,918.6
    - C 49.186
    - D 4.9186

Go on to the next page.
19 \( \frac{3 \times 0}{1 + 0} = \)
\[
\begin{array}{llll}
&A & 0 \\
&B & 1 \\
&C & 1 \\
&D & 3 \\
\end{array}
\]

25 \( \frac{25 \times 248}{2} = \)
\[
\begin{array}{llll}
&A & 62 \\
&B & 124 \\
&C & 144 \\
&D & 310 \\
\end{array}
\]

31 \( \frac{17}{2} \div 21 = \)
\[
\begin{array}{llll}
&A & 12 \\
&B & 14 \\
&C & 18 \\
&D & 30 \\
\end{array}
\]

20 \( 8 \times 25\% \times 50\% = \)
\[
\begin{array}{llll}
&A & 62 \\
&B & 124 \\
&C & 144 \\
&D & 310 \\
\end{array}
\]

26 \( 3000 - 100.01 = \)
\[
\begin{array}{llll}
&A & 2,899.99 \\
&B & 2,900.01 \\
&C & 2,900.99 \\
&D & 2,999.99 \\
\end{array}
\]

32 \( .016 = \)
\[
\begin{array}{llll}
&A & .016\% \\
&B & .16\% \\
&C & 1.6\% \\
&D & 16\% \\
\end{array}
\]

27 \( \frac{(2)^2}{2} = \)
\[
\begin{array}{llll}
&A & .01 \\
&B & .02 \\
&C & .1 \\
&D & .2 \\
\end{array}
\]

33 If \( a = 135 \) and \( b = 20 \), then \( \frac{ab}{2} = \)
\[
\begin{array}{llll}
&A & 77\frac{1}{2} \\
&B & 675 \\
&C & 1,350 \\
&D & 2,700 \\
\end{array}
\]

28 \( .24 + \frac{7}{10} = \)
\[
\begin{array}{llll}
&A & .247 \\
&B & .31 \\
&C & .41 \\
&D & .94 \\
\end{array}
\]

34 \( 4\frac{1}{2} = \)
\[
\begin{array}{llll}
&A & \frac{9}{2} \\
&B & \frac{9}{4} \\
&C & \frac{9}{2} \\
&D & \frac{9}{4} \\
\end{array}
\]

29 \( 8 + \frac{1}{4} = \)
\[
\begin{array}{llll}
&A & \frac{1}{4} \\
&B & \frac{1}{4} \\
&C & 2 \\
&D & 32 \\
\end{array}
\]

30 4 hours 10 minutes 32 seconds
\[
\begin{array}{llll}
&A & 12 \text{ hours 31 minutes 36 seconds} \\
&B & 12 \text{ hours 30 minutes 36 seconds} \\
&C & 4 \text{ hours 11 minutes 36 seconds} \\
&D & 4 \text{ hours 3 minutes 36 seconds} \\
\end{array}
\]
35 If $3x - 7 < 11$, which of the following defines all values of $x$?

A $x < \frac{1}{3}$  
B $x < 6$  
C $x < 12$  
D $x < 54$

36 $\frac{1}{16} =$

A $6\frac{2}{3}$  
B $12\frac{1}{2}$  
C $16\frac{2}{3}$  
D $24\%$

37 $\frac{9}{-3} - 1 =$

A $-4$  
B $-\frac{3}{2}$  
C $-2$  
D $2$

38 $\frac{1}{2}$ of 246 =

A 123  
B 49.2  
C 4.92  
D 1.23

39 How many ounces are in .45 pound?

A 2.8  
B 3.6  
C 7.2  
D 72

40 9 is to 3 as 2.4 is to

A 8  
B 7.2  
C .8  
D .72

41 35 is what percent of 20?

A 175%  
B 166%  
C 115%  
D 57%

42 In the formula $FD = fd$, if $F = 85$, $D = 3$, and $f = 75$, then $d =$

A $3\frac{1}{3}$  
B $3\frac{2}{3}$  
C $2\frac{1}{3}$  
D $2\frac{2}{3}$

43 The average of 5 feet 2 inches, 5 feet 9 inches, and 15 feet 7 inches is

A 8 feet 4\(\frac{3}{4}\) inches  
B 8 feet 6 inches  
C 8 feet 10 inches  
D 13 feet 3 inches

44 $\sqrt{\frac{169}{400}} =$

A $\frac{13}{20}$  
B $\frac{13}{2}$  
C $\frac{13}{10}$  
D $\frac{13}{5}$

45 $10^\circ ~ 35' ~ 42'' - 79^\circ ~ 46' ~ 38'' =$

A 90° 21′ 20″  
B 90° 22′ 20″  
C 91° 22′ 20″  
D 91° 32′ 10″

46 $21$ is 87\% of

A 40  
B 32  
C 24  
D 18

47 $4^2 + 2(-3)(4) - (-3)^2 =$

A $-17$  
B $0$  
C $1$  
D $49$

48 If $s = 9$, $a = 3$, $b = 8$, and $c = 7$, then $\sqrt{s(s - a)(s - b)(s - c)} =$

A $2\sqrt{3}$  
B 6  
C $6\sqrt{3}$  
D $9\sqrt{2}$

Go on to the next page.
Reading

Part I Vocabulary-Directions

Each of the sentences in this part of the test is followed by an incomplete statement and four suggested answers.

You are to decide which one of these answers best completes the statement. Your choice should be made on the basis of what is stated or implied in the sentence.

Find the row of circles on your answer sheet which has the same number as the sentence. In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE

The policeman told the boy that the candy store was right around the corner.

The policeman was


Answer

Since the policeman was helpful, the correct answer to this sentence is B. Therefore, circle B is marked.

STOP. Wait for further directions.
49 \[ \frac{3[-5 - 7(4 - 7)]}{-6} = \]

A \{-13 \}
B \{-3 \}
C \{3 \}
D \{13 \}

50 \( (3.79 \times 10^4) + (2.3 \times 10^6) = \)

A \{233,079 \}
B \{233,790 \}
C \{2,303,790 \}
D \{2,337,900 \}

51 Which of the following is the best estimate of \( \frac{7 (9 \frac{1}{2} + \frac{7}{2})}{2} \)?

A \{30 \}
B \{35 \}
C \{38 \}
D \{42 \}

52 A rectangular lot 8 yards by 12 yards has an area of how many square feet?

A \{104 \}
B \{288 \}
C \{732 \}
D \{840 \}

53 \( \frac{3 + \frac{7}{3}}{1 + \frac{2}{3}} = \)

A \{2 \}
B \{\frac{22}{3} \}
C \{\frac{21}{2} \}
D \{\frac{21}{3} \}

54 \( \sqrt{0.0049} = \)

A \{.007 \}
B \{.07 \}
C \{.7 \}
D \{7 \}

55 Of the following, which is least?

A \{\frac{3}{4} \}
B \{\frac{3}{5} \}
C \{\frac{4}{5} \}
D \{\frac{5}{6} \}

56 \( \frac{1}{5} \times \frac{3}{8} + (\frac{1}{6} \times \frac{5}{8}) = \)

A \{.5 \}
B \{.6 \}
C \{.8 \}
D \{1 \}

57 \( .6275 = \)

A \{.62 \}
B \{.63 \}
C \{.67 \}
D \{.7 \}

58 \( .212121 \ldots = \)

A \{\frac{1}{5} \}
B \{\frac{1}{6} \}
C \{\frac{3}{17} \}
D \{\frac{7}{31} \}

59 \( \frac{1.7 \times 10^3 \times 6.3 \times 10^1}{2.1 \times 10^4} = \)

A \{5.1 \times 10^4 \}
B \{5.1 \times 10^2 \}
C \{5.1 \times 10^3 \}
D \{3.4 \times 10^3 \}

60 \( \sqrt{8} + \sqrt{18} = \)

A \{\sqrt{26} \}
B \{5\sqrt{2} \}
C \{6\sqrt{2} \}
D \{10 \}

STOP. If you finish before time is called, check your work on this test. Do not turn to any other test in this book.
Part I: 30 minutes/60 questions

1 Athletes play best in serious games that pit their skill against the skill of others.
Athletes play better when they are
A practicing. B competing.
C learning. D showing off.

2 The discussion soon led to a dispute between the two men over the question of who was the real cause of the accident.
Dispute means
A conclusion. B argument.
C compromise. D decision.

3 The two delegates left the meeting satisfied that concordance had been reached on the vital issue.
Concordance means
A agreement. B crisis.
C declaration. D transaction.

4 When the weather vane points to the west, we know that the wind is coming from the eastern shore.
The weather vane indicates wind.
A velocity. B intensity.
C direction. D resistance.

5 The rough sea caused the cargo to shift to one side of the ship, which began to list dangerously.
List means
A spin. B twist.
C sink. D tilt.

6 Chemists have learned many ways of converting one inorganic substance into another.
Converting means
A bending. B compelling.
C transforming. D continuing.

7 In spite of the obvious yawns and the vacant look on the faces of his audience, the speaker launched into another inerminable story.
The speaker was
A a professor. B a comedian.
C a bore. D an expert.

8 Matt could not bear to touch reptiles, and just the sight of lizards made him shrink back in disgust.
Matt was
A wistful. B squeamish.
C foolish. D shy.

9 The other guests thought Mrs. Watson was being extremely pretentious when she wore her new mink coat to the ball game.
Pretentious means
A unfair. B showy.
C sensitive. D uninformed.

10 Joni's business was well managed, and although it brought in little at the start, it soon became very lucrative.
Lucrative means
A diversified. B profitable.
C feasible. D expensive.

11 In labor disputes, the demands of both sides must to some extent be met before a settlement can be made.
Settling a labor dispute requires
A compromise. B submission.
C constraint. D assiduity.

12 Physicians are able to retard the spread of disease by means of inoculation.
Retard means
A redirect. B tolerate.
C take over. D slow down.
13 Stan commiserated with his younger brother over the loss of his dog, since he knew how much his brother had loved it.

**Commiserated means**
A disputed.  B fought.  
C sympathized.  D talked.

14 Many people choose to reside in the suburbs even though this means that they must travel long distances to work.

**Reside means**
A shop.  B visit.  
C relax.  D live.

15 Although one would expect the opposite to be true, a learned person can sometimes be duped even more easily than an ignorant person.

**Duped means**
A fooled.  B employed.  
C inspired.  D enlightened.

16 Having reached a conclusion, George held to it regardless of any evidence to the contrary; neither reason nor threats could alter his opinion.

**George was**
A obstinate.  B imaginative.  
C cowardly.  D unreliable.

17 By voting “yes,” the group ratified the rules that their president had made.

**Ratified means**
A approved.  B argued with.  
C thought about.  D examined.

18 The doctor felt quite despondent when she realized that there was very little hope that the patient’s condition would improve.

**Despondent means**
A confident.  B informed.  
C deceived.  D discouraged.

19 The airline employees were on strike, and in the railroad station hundreds of people waiting for trains had to stand amid their baggage.

**The station was**
A congested.  B outmoded.  
C temporary.  D shabby.

20 Since Betsy also had seen the accident and corroborated Jack’s testimony, Jack was acquitted of the charge of reckless driving.

**Corroborated means**
A confirmed.  B understood.  
C appreciated.  D quoted.

21 No mathematical theory was too abstruse for this woman, who had spent many years studying the subject.

**Abstruse means**
A lengthy.  B celebrated.  
C difficult to translate.  D difficult to understand.

22 The screaming mob created such tumult that its intended victim escaped unobserved.

**Tumult means**
A hilarity.  B enthusiasm.  
C commotion.  D tension.

23 After discussing the case for two days, the jury still could not agree on a verdict.

**Verdict means**
A victim.  B charge.  
C decision.  D speech.

24 The city council has initiated no important programs, and is even incapable of enforcing the laws already in existence.

**The council is**
A stingy.  B corrupt.  
C ineffectual.  D conspiratorial.

Go on to the next page.
25 Adages express popular wisdom in concise and striking phrases, such as “A stitch in time saves nine.”

Adages are

26 Eloise was an ingenious person who always said exactly what she thought.

Ingenuous means

27 The scientists were exposed to the elements and bitten by insects, but they continued to collect specimens.

The scientists were

28 She did not mind losing the ring, because it was only a bauble and the stones in it were imitation gems.

Bauble means

29 Although some sea creatures are immobile, they do not lack food because other creatures swim to them.

Immobile means

30 The newspaper publisher, by printing almost the entire book without the author’s permission and without paying him, infringed the author’s copyright.

Infringed means

31 So few people spoke to him after he betrayed his friend that he was virtually a pariah.

Pariah means

32 It was said of Euripides that every verse was a precept: from his writings one could learn how to behave properly.

Precept means

33 The spoiled young man stood against the wall, looking up at the sky with the injured expression of a child who has been told that he may not have an apple.

The man was

34 The candidate bristled at what she considered unfair criticism of her record.

The candidate was

35 The soldier, by using all his skill, managed to slip past the attentive guard.

The guard was

36 The monks of the Middle Ages transcribed manuscripts by hand, as there was no mechanical duplicating device available.

Transcribed means
37 The charges were not substantiated; instead, the evidence pointed to a different conclusion.

**Substantiated means**
- A explained
- B dismissed
- C finished
- D confirmed

38 The village seemed to be of another century; picturesque shops lined the cobbled streets, and the people wore strange but beautiful costumes.

The village was
- A grotesque
- B gloomy
- C quaint
- D haunted

39 It is often true that only by going too far can we find out how far we can go, though one has to be a very great poet to justify such perilous adventures.

**Perilous means**
- A hazardous
- B circuitous
- C irregular
- D careless

40 Even though they are plants, some molds live by feeding upon tiny animal organisms in the soil.

These molds are
- A gluttonous
- B predatory
- C warlike
- D poisonous

41 Adam believed that whatever was going to be would be, and there was no use worrying about it.

Adam was
- A neurotic
- B fatalistic
- C discouraged
- D harried

42 Over one hundred newspaper reporters stormed the city hall in protest against the new law that they felt would shackle, to a great extent, their efforts to get all the news.

**Shackle means to**
- A destroy
- B hinder
- C punish
- D counteract

43 During the seventeenth century, some soldiers tried to obtain inviolability against enemy weapons by means of charms and spells.

**Inviolability means**
- A immunity
- B release
- C victory
- D responsibility

44 Every mother knows that her child's unexpected blandishment is a good sign of a broken vase somewhere in the house.

**Blandishment means**
- A imitation
- B revilement
- C extreme annoyance
- D gentle flattery

45 It began to appear that the union could not be prevented from striking by anything short of an injunction.

**An injunction is**
- A a formal complaint
- B a polite request
- C a legal contract
- D an authoritative order

46 The student's humorous comments showed disrespect for the speaker and little appreciation of the seriousness of the subject.

The student's comments were
- A cogent
- B flippant
- C militant
- D innocent

47 We were so overwhelmed by the pyrotechnics of her histrionic performance that it was difficult to believe that she was portraying a human being.

**The actress was**
- A well-cast
- B overly dramatic
- C highly celebrated
- D inexperienced

Go on to the next page.
The chairman was shocked by the apostasy of one of the formerly faithful members of his group.

Apostasy means
A individuality.  B criticism.
C teaching.  D defection.

STOP. If you finish before time is called, check your work on this part.
Do not go on to Part II or turn to any other test in this book.

Part II Comprehension-Directions

Read each passage carefully and then answer the questions on the basis of what is stated or implied in the passage.

Find the row of circles on your answer sheet that has the same number as the question. In this row, mark the circle that has the same letter as the answer you have chosen.

STOP. Wait for further directions.
48 George used the familiar phrase, "putting the cart before the horse," to describe the prematurity of our decision.

George's expression was a
A simile.  B cliche
C euphemism.  D maxim.

49 Because she was paying more attention to television than to her conversation, Rose let the girl's name slip out.

Rose's mention of the girl's name was
A inadvertent.  B inevitable.
C impudent.  D illicit.

50 She acquired a reputation for being proficient in the art of healing, and was soon the most sought-after of physicians.

Proficient means
A well-known.  B creative.
C sympathetic.  D adept.

51 The estate had tennis courts, a swimming pool, a guest house, and a riding ring.

One would expect that the owner of the estate is
A amiable.  B austere.
C astute.  D affluent.

52 Sitting close to the stage, Edith observed that the actors' costumes were trimmed with gilt braid and tarnished sequins that concealed the worn spots and the cheap fabric.

The costumes were
A lavish.  B tawdry.
C dowdy.  D frilly.

53 The thieves crouched in the shadows, trying to sneak into the house unseen.

The thieves' behavior was
A defiant.  B furtive.
C resentful.  D nonchalant.

54 Since she relies on traditional techniques to express age-old ideas, her work can hardly be called innovative.

She is
A elderly.  B scholarly.
C conservative.  D sentimental.

55 The dragonfly's wings are very delicate-looking; in fact, they are so thin that one can see through them.

The dragonfly's wings are
A ineffable.  B vapid.
C intangible.  D diaphanous.

56 A powerful member of the planning board blocked every design presented by the architect.

The architect's efforts were
C condoned.  D imprudent.

57 In accordance with her family's wishes she studied bookkeeping and finance, but she continued to indulge her interest in literature in her spare time.

Her study of literature was
A a vocation.  B a prerequisite.
C an obligation.  D a diversion.

58 Bill was the kind of person who retaliated against anyone who offered him even the slightest insult.

Bill was
A vindictive.  B callous.
C unappreciative.  D abusive.

59 Prestressed concrete is extremely useful as a building material because it is as supple as a diving board.

Supple means
A hard.  B yielding.
C durable.  D straight.
For many years, we have trapped and banded most of the chickadees on our farm each winter. Number 65290 was one of seven chickadees constituting the class of 1937. When he first entered our trap, he showed no visible evidence of genius. When banded and released, he pecked his new anklet in mild annoyance, and hurried to catch up with the gang.

By the fifth winter 65290 was the sole survivor of his generation. Signs of genius were still lacking, but there was now proof of his extraordinary capacity for living. Was 65290 clever in dodging his enemies? What enemies? A chickadee is almost too small to have any. He is just too big to be snapped up by flycatchers as an insect, and just too little to be pursued by hawks as meat.

It seems likely that weather is the only killer so devoid of both humor and dimension as to kill a chickadee. Chickadees must know not to venture into windy places in winter and not to get wet before a blizzard. I learned the second precept one drizzly winter dusk while watching a band of chicks going to roost. The drizzle came out of the south, but I could tell it would turn northwest and cold before morning. The chicks went to bed in a dead oak, the bark of which had peeled and warped into hollows of various sizes and exposures. The bird selecting a roost dry against a south drizzle, but vulnerable to a northwest one, would surely be frozen by morning. The bird selecting a roost dry from all sides would awaken safe. This, I think, is the kind of wisdom that spells survival and accounts for 65290 and his like.

Another beneficial habit of chickadees is that of investigating every loud noise. When we start chopping in our woods, the chicks at once appear and stay until the felled tree or riven log has exposed new insect eggs or pupae for their delectation. What served as their dinner bell before the day of axes? Presumably the crash of falling trees. In 1940 an ice storm felled an extraordinary number of trees in our woods. Our chicks scoffed at the bait in our trap for a month, being replete with the dividends of the storm and content just to be living a chickadee life.

1 The author is primarily concerned with discussing
A bird banding on his farm.
B the long life of 65290.
C the forces inimical to chickadees.
D the survival techniques of chickadees.

2 The author states that 65290 was characterized by
A notable traits of stupidity.
B a notable capacity for survival.
C late-developing signs of genius.
D an unusually pleasing personality.

3 The author states that chickadees have few enemies because of their
A size.
B speed.
C isolation.
D friendliness.
4 According to the passage, the chickadee keeps the cold and wet from getting under his feathers by
A flying into the wind instead of with it.
B roosting on the south side of trees instead of the north.
C huddling with other chickadees rather than roosting alone.
D moving often to stimulate circulation and shake off wetness.

5 From the information in the passage, it can be inferred that a chickadee pecks at a fallen tree in order to
A satisfy his curiosity.
B eat the nourishing underbark.
C get bark for nesting material.
D look for edible inhabitants of the wood.

6 With which of the following statements regarding chickadees would the author be most likely to agree?
A Chickadees prefer winter weather.
B Chickadees never travel in large groups.
C Chickadees are unusually timid around man.
D Chickadees can stay in one locality year-round.
"My dear father," said Peter. "I beg you to prepare your mind for what I am going to say! Father, I love this young lady, and we are engaged."

"Engaged!" cried Mr. Throgbottle, reclining on the sofa, and shutting out the sight of his son with his hand. "An arrow launched at my heart, and by my own child!"

"We have been engaged for some time, father," faltered Peter.

Mr. Throgbottle uttered a groan.

"No, pray don't!" cried his son.

"Boy," said Mr. Throgbottle, "it is well that your sainted mother is spared this pang."

"My dear father," said Peter, "we well know what little comforts you are accustomed to, and have a right to; and it will always be our study, and our pride, to provide these before anything. If you will bless us with your approval and consent, father, we shall not think of being married until it is quite agreeable to you; and when we are married, we shall always make you—of course—our first consideration. We feel how truly unnatural it would be in us, if we failed to know it, or if we failed to exert ourselves in every possible way to please you."

Mr. Throgbottle underwent a severe internal struggle, and came upright on the sofa again, with his cheeks puffing over his stiff cravat: a perfect model of parental deportment.

"My son!" said Mr. Throgbottle. "My children! I cannot resist your prayer. Your happiness shall be my care. I will watch over you. You shall always live with me; this house is henceforth as much yours as mine: consider it your home. May you long live to share it with me!"

The power of his deportment was such, that they really were as much overcome with thankfulness as if, instead of quartering himself upon them for the rest of his life, he were making some munificent sacrifice in their favor.

"For myself, my children," said Mr. Throgbottle, "I am falling into the sere and yellow leaf, and it is impossible to say how long the last traces of gentlemanly deportment may linger in this weaving and spinning age. But, so long, I will do my duty to society, and will show myself, as usual, about town. My wants are few and simple. My little apartment here, my frugal morning meal, and my little dinner, will suffice. I charge your dutiful affection with the supply of these requirements, and I charge myself with all the rest."

They were overpowered afresh by his uncommon generosity.

From *Bleak House* by Charles Dickens.

7 Mr. Throgbottle can best be described as
A proper and reserved.
B generous and sentimental.
C crafty and self-serving.
D pathetic and helpless.

8 The tone of the last sentence can best be described as
A ironic.
B bitter.
C incredulous.
D commendatory.

9 In which of the following ways does Mr. Throgbottle influence his son?
I. He minimizes his own needs.
II. He offers his son money.
III. He implicitly consents to his son's marriage.
A I and II only
B I and III only
C II and III only
D I, II, and III

10 The passage makes clear that Peter is
A easily manipulated.
B subtly evasive.
C slightly greedy.
D coldly impersonal.
Elegy on the Death of a Mad Dog

And people all, of every sort,
Give ear unto my song;
And if you find it wond'rous short,
It cannot hold you long.

In Islington there was a man,
Of whom the world might say,
That still a godly race he ran,
Whene'er he went to pray.

A kind and gentle heart he had,
To comfort friends and foes;
The naked every day he clad,
When he put on his clothes.

And in that town a dog was found,
As many dogs there be,
Both mongrel, puppy, whelp, and hound,
And curs of low degree.

This dog and man at first were friends:
But when a pique began,
The dog, to gain some private ends,
The man recover'd of the bite.
The dog it was that died.

"Elegy on the Death of a Mad Dog" by Oliver Goldsmith.

12 Lines 13–16 show that the dog that bit the man was
A unlike the other dogs in the town.  
B wretched and vicious by nature.  
C not a real dog but a symbol of evil.  
D an ordinary, undistinguished dog.

13 The poet creates the ending's surprise effect by doing all of the following EXCEPT
A alluding to the baseness and disreputableness of the dog.  
B building up an impression of a pious, honorable man.  
C hinting at the seriousness of the man's wound.  
D creating an atmosphere of agitation and concern by including the neighbors' comments on the unfortunate nature of the incident.

14 Which of the following statements best expresses the theme of the poem?
A If a dog bites a man, that is not news; if a man bites a dog, that is news.  
B If a dog bites a man and the man dies, it is an act of the devil; if a dog bites a man and the dog dies, it is an act of God.  
C If a mad dog bites a good man, the poison from the dog kills the man; if a dog bites a bad man, the poison from the man kills the dog.  
D If a dog bites a man and the man survives, it is a sign that civilization cannot fall prey to bestiality.
What kind of men do we think the medieval knights really were? I have always seen them in a romantic light, finer than human. But only the poets hold this view of knights, not the scholars. Here, for example, is a cold-hearted scholar, Monsieur Albert Guérard. He has been digging into the old medieval records with an unromantic eye. hang him; and he has emerged with his hands full of facts that prove the knights were quite different from what the poets thought they were, though they did have some good qualities. When invaders came around, the knights fought them off as nobly as possible; and they often went away and fought Saracens or ogres or such, and when thus engaged they gave little trouble to the good folk at home. But in between wars, not being educated, they couldn't sit still and be quiet. It was dull in the house. They liked action. So they rode around the streets in a pugnacious, wild-western manner, despising anyone who could read and often knocking him down; and making free with the personal property of merchants and peasants, who they thought had no special right to property or even to life. Knights who felt combative gave in to their feelings, and the injuries they inflicted were often fatal.

Some day when our modern monopolists are extinct, in their turn, will future poets sing of their fine deeds and make young readers dream? Our monopolists are not popular in our day, but the knights weren't in theirs, and whenever abuse grows extreme a reaction will follow. Our critics and reformers think they will be the heroes of song, but do we sing of critics who lived in the age of chivalry? There must have been reformers then who pleaded the cause of down-trodden citizens and denounced and exposed cruel knights, but we don't know their names. It is the knights we remember and idealize. They were the doers—and the men of the future will idealize ours. The predatory interests of our time will seem to them gallant and strong. When a new poet comes along he will never look up the things in our newspapers; he won't even read the encyclopedia—poets don't. He will get his conception of monopolists from his heart.

The men of the future will read, and disparage their era, and wish they had lived in the wild clashing times we have now. They will try to enliven the commonplaceness of their tame daily lives by getting up memorial pageants where they can dress up as monopolists. And readers will sigh if some book says that monopolists were not all noble, but a mixed human lot, like the knights.

According to the passage, the medieval knights can be described as all of the following EXCEPT
A intolerant.
B irresponsible.
C inhibited.
D inconsiderate.

The parallel drawn by the author between medieval knights and modern monopolists is based in part on
A their shared dislike for intellectuals.
B the ways in which reformers correct their excesses.
C their love of fighting and violence.
D their unpopularity with their contemporaries.

According to the author, people are most likely to idealize which of the following traits?
A Aggressiveness
B Physical strength
C Nobility
D Wealth
18 The author would probably predict that which of the following is most likely to be idealized by future generations?

A A union official who forces a corporation to improve working conditions for members of his union

B A gangster who makes a fortune by building up a terrorist organization to control liquor sales

C A dictator who keeps the populace contented through the use of propaganda

D A newspaper editor who causes the downfall of the government by exposing graft and corruption

19 The author is primarily concerned with

A defending monopolists against their critics.

B discussing the differences between knights and monopolists.

C criticizing those who portray knights realistically.

D making a generalization about human nature.
Signs and symbols, sometimes simple and sometimes complicated, were considered necessary to almost every magical incantation or prophecy from prehistoric times down through the Middle Ages, and were absolutely indispensable in summoning forth demons and spirits. The oldest diagram in use was the simple circle—the shape of the all-powerful sun, the egg, the wheel, the lotus flower, the encircling horizon, and the all-seeing eye's iris. The idea of eternity was often symbolized by a serpent coiled into a perfect circle, biting its own tail. Probably the next oldest sign was the triangle. It was thought to be magical because its three points had so many meanings. They could stand for earth, sky, and water...father, mother, and child...body, soul, and mind...past, present, and future...an infinity of threes. In the Christian religion it came to represent the Holy Trinity of God the Father, Son, and Holy Ghost. The many meanings of the triangle were responsible for the belief among some people that three is a magic number, and for the saying that "good things come in threes." The fear of "breaking" the mystic triangle is also the reason why so many superstitious people refuse to walk under a ladder.

Several of our present-day religious symbols were used in magical ceremonies ages before they achieved a holy significance. The X mark or + mark, which became the Christian cross, was one of the oldest magic signs. It represented "man standing at the center of nature"—the whole universe stretching out before and behind him and on either side. The magicians used the cross mark to "pin down" a spirit or a wish or a thought at the intersection of the two lines. This is why someone may still cross his fingers when making a wish and cross his heart when making a promise.

The diagram of two interlocking triangles, now known as the Star of David, has been the symbol of the Jewish religion since the time of the Greeks and Romans. But long before that it had been a mystic diagram in a great many societies. And long after Judaism adopted it, the sign was still a stand-by for magicians and alchemists. The sorcerers believed it represented the footprint of a special kind of demon called a trudi and used it in ceremonies both to call up demons and to keep them away. In alchemical formulas the Star of David magically combined two hostile opposites—the symbol for fire (a triangle pointing up) and the symbol for water (a triangle pointing down).

But the most powerful and respected of all magical symbols was the pentagram—the figure of five equal sides and angles. Sorcerers claimed that the Star of Bethlehem, which heralded Jesus' birth, was a pentagram. The belief was that if this figure were drawn with a single angle pointing up, the symbol stood for God and so could be used in consulting the good spirits; pointing down, the sign represented Satan and thus was used for invoking evil spirits.

From Block Magic, White Magic by Gary Jennings
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20 The author's main purpose is to
A discuss the importance of magic in religious ceremonies.
B explain the magical significance of various geometric figures.
C question the historical background of some present-day superstitions.
D emphasize the important role magic played in ancient times.

21 According to the passage, the Star of David was used by alchemists because of their belief that
A the power commanded by a religious symbol would aid them in their work.
B two triangles would bring them twice the good fortune that one would.
C two interlocking triangles invoked the power of the special demon called a trudi.
D two interlocking triangles represented the combination of two opposing elements.
22 It can be inferred that the circle was the first magical sign because
A primitive man was not able to draw more complicated figures.
B those natural phenomena of greatest importance to primitive man were in the shape of a circle.
C the circle was easily adaptable to primitive religious rites.
D the greatly revered serpent formed a circle when biting its own tail.

23 The author's attitude toward his subject can best be described as
A apologetic.
B critical.
C objective.
D disillusioned.

24 Based on the information in the passage, a sorcerer wishing to ensure immortality for himself would be most likely to invoke the power of which of the following signs?
A a circle
B a triangle
C a cross
D a pentagram
(The scene is a drawing room. Lady Rutledge and Mr. Ortley come in. They are in Louis XV costume.)

LADY RUTLEDGE: My dear Mr. Ortley, it is sweet of you to join the cast at so short notice. Dorchester's dropping out at the last moment threw Lord Rutledge into an abyss of despair.

ORTLEY: Since I arrived last night, it's taken all my time to fit myself into my costume and learn my lines.

LADY RUTLEDGE: I don't know what we should have done without your goddaughter. Our poor aunt, the duchess, was the most fantastic creature! This idea of leaving us Briery on condition that we spend a month here every spring was, I must say, rather touching. The place is a desert where she could never bear to live for longer than a week. She spent all winter sighing for it, and when the first crocus appeared she fled to the Continent. When she returned to Paris for the winter, she always swore that the very next April would see her at Briery. When death called her, she left it to us to keep her broken pledges.

ORTLEY: Very delicate thought, if I may say so.

LADY RUTLEDGE: Wasn't it? A month in the country, with a ball or two to break the tedium, is quickly over. But as for the clause obliging us to rear a dozen orphans in the east wing—my word—she must have laughed when she wrote that!

ORTLEY: The stirrings of Christian charity perhaps.

LADY RUTLEDGE: My aunt was weaned on rationalism. If she felt the belated urge to do a little something for the Lord, it can only have been out of politeness. She loathed children. She had a footman, Jules, whose duty it was to precede her in public places and clear the streets of them.

ORTLEY: A twinge of remorse perhaps?

LADY RUTLEDGE: You didn't know my aunt. No, I see only one way to explain the orphanage: the desire to play a posthumous practical joke on my husband and me. I must say, Lord Rutledge took it very well. He adored squabbling with my aunt. "I see," said he, when the lawyer had finished reading the will. "She wants twelve screaming urchins to drive us mad for four weeks every year, does she? We'll take twelve little deaf-mutes." I'm sure when my aunt heard that she turned in her tomb in the family vault.

ORTLEY: Yet you abandoned the scheme, I see. I thought I heard young voices as I passed through the garden just now.

LADY RUTLEDGE: Yes. Unfortunately the will stipulated orphans. The world may be brimming over with distress, but a dozen deaf-mute orphans is rather a tall order. So we selected twelve orphans with sturdy vocal cords and took refuge in the west wing. The next thing was to organize a Grand Charity Ball for the inauguration of the orphanage. Things were going with a swing when, the other morning—catastrophe!—the orphans descended on us. We'd forgotten all about them. That's when I sent you my telegram, and you very kindly lent us your goddaughter. Does she like it here?

ORTLEY: She adores children. She had to earn her living when her mother died. She opted for child welfare.

LADY RUTLEDGE: It's as good a hobby as any other, I suppose. Personally, I prefer my rose trees. They don't complain.


25 According to Lady Rutledge, the duchess made out her will in a manner calculated to
A save her own conscience.
B be of the most benefit to the most people.
C cause friction between Lord Rutledge and his wife.
D cause her beneficiaries discomfort.

26 It can be inferred that Briery is a
A resort.
B small farm.
C large country house.
D luxurious apartment house.
27 It can be inferred that Ortley has come to Brierly in order to
A act in a play.
B help take care of the orphans.
C act as executor for the duchess' will.
D help to prepare the house for the Charity Ball.

28 According to Lady Rutledge, the feelings for Brierly expressed by her aunt were
A based on her religious beliefs.
B similar to her feelings about children.
C inconsistent with her actions.
D disapproved of by Lord and Lady Rutledge.

29 Lady Rutledge tells the anecdote about Jules the footman in order to
A illustrate the way in which the duchess treated her servants.
B gain Ortley's support in her campaign to overthrow her aunt's will.
C support her theory about the inclusion of the orphans in her aunt's will.
D emphasize a difference between her own character and that of her aunt.

30 Which of the following best describes the duchess' character?
A Meek
B Philanthropic
C Religious
D Worldly

STOP. If you finish before time is called, check your work on Part II. Do not go back to Part I or turn to any other test in the book.
Mechanics of Writing

Part I Spelling-Directions

In each group of words, find the misspelled word if there is one.

*No group has more than one misspelled word.*

If there is no misspelled word, the answer is D.

Find the row of circles on your answer sheet which has the same number as the group of words. In this row, mark the circle having the same letter as the answer you have chosen.

**EXAMPLE 1**

A monney  
B funny  
C sunny  
D no error

In this group of words, the misspelled word is A, so circle A is marked.

**EXAMPLE 2**

A foe  
B low  
C sew  
D no error

There is no misspelled word in this group, so circle D is marked.

STOP. Wait for further directions.
**Part 1 15 minutes 45 questions**

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STOP. If you finish before time is called, check your work on this part.
Do not go on to Part II or turn to any other test in this book.
Part II Capitalization and Punctuation—Directions

The following sentences contain problems in capitalization and punctuation.
In some sentences the punctuation or capitalization is incorrect.
You will find that the error, if any, is underlined and lettered.
If there is an error, select the one underlined part that must be changed to make the sentence correct.
No sentence contains more than one error.
If there is no error, the answer is D.
Find the row of circles on your answer sheet which has the same number as the sentence. In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE 1
Jane Harris and i are joining the Girl Scouts.

\[ \begin{array}{ccc}
A & B & C \\
\text{No error} & \text{Answer} & \circ \circ \circ \circ \\
D & & \\
\end{array} \]

In this sentence, the underlined part lettered A is incorrect, so circle A is marked.

EXAMPLE 2
These books, flowers, and dolls are her's.

\[ \begin{array}{ccc}
A & B & C \\
\text{No error} & \text{Answer} & \circ \circ \circ \circ \\
D & & \\
\end{array} \]

In this sentence, the underlined part lettered C is incorrect, so circle C is marked.

EXAMPLE 3
Mr. Brown is going to Europe next week.

\[ \begin{array}{ccc}
A & B & C \\
\text{No error} & \text{Answer} & \circ \circ \circ \circ \\
D & & \\
\end{array} \]

There is no error in this sentence, so circle D is marked.

STOP. Wait for further directions.
Part II 25 minutes: 45 questions

1. Walter Hickel, former secretary of the Interior, suggested that there is too much undeveloped, publicly-owned land throughout America. No error

2. Professor Clark said, "Please bring to class your copy of Sandburg's poem, 'Jazz Fantasia.'" No error

3. The Argonauts of Greek mythology sailed with a fair wind away from Lemnos, past mount Pelion, and past the wooded hills of Athens. No error

4. In the Middle Ages the city wall served as an open promenade for recreation. No error

5. In the 1940s America had more than six million farms; today the number is about half that. No error

6. Along the southeastern border of France rise the French Alps, a mighty barrier that provides some of the most spectacular scenery in Europe. No error

7. In 1904, at the Congress of Arts, and Sciences at St. Louis, Missouri, J. M. Baldwin predicted that "the psychology of the future will be social to the core." No error

8. Among the Romantic poets studied in English literature courses, Lord Byron is by far the most dashing figure of the pre-Victorian period. No error

9. The Holden Zoo, the Punderson State Park, and the Mentor Marshes are located in Geauga County east of Gates Mills. No error
10 No, designing special-purpose digital computers for the Air Force isn't easy work," replied the engineer, "but it's creative and rewarding."  

11 Firecrackers, rice cakes, and watermelons, are all parts of the celebration of Tet, the Vietnamese New Year's Day.  

12 "Will you make sure that all the boys turn in their uniforms, Steve?" asked Mr. Ross.  

13 The caption read: "King Charles succumbed to a fever on May 31, 1574, less than a year after the huguenot rebellion."  

14 "Dr. Jameson ordered the new x-ray machine several months ago, but it hasn't been delivered yet," said his assistant.  

15 Although Jonathan Swift intended to write for an audience of adults, as did Daniel Defoe; generations of children have loved both authors.  

16 The mayoralty candidate was an Attorney, a member of the Millburg Board of Education who had many valuable business connections.  

17 William James, the eminent psychologist, exhibited a deep appreciation of the social factors in behavior in "The Consciousness of Self," a chapter of his major work on the principles of psychology.  

18 Samuel E. Morison, the venerable Historian, won a Pulitzer Prize for his biography of John Paul Jones.
19 The magnificent frescoes by Giotto that adorn the East walls of Santa Croce in Florence, Italy, were damaged in 1966 by heavy floods. No error

20 The 1964 election had its greatest effect in the House of Representatives, where the Democrats gained thirty-eight seats. No error

21 In any form of research, the driving forces of originality, imagination, and insight are necessary to create new developments and opportunities. No error

22 In August, 1776, Congress passed two bills that offered free farms to Hessian troops who would desert. No error

23 "Yes today's toy soldier is shoddily made, but he carries a complete array of carefully scaled, up-to-date weaponry," replied the old craftsman. No error

24 "It's not necessary to rush your typing of this report, Jennifer," said her employer. No error

25 Voltaire, France's foremost champion of reason and tolerance during the Eighteenth century, was persecuted for his writings. No error

26 Some scientists think that there is little chance of life on other planets; others, however, feel that life in some form may exist in space. No error

27 Immigrants often find that the Old World, so close to their own minds and hearts, is vague and meaningless to the second-generation of Americans. No error

28 The Hyksos (foreign invaders who ruled more than three millennia ago), introduced the horse to Egypt. No error

29 A poster announced that at three o'clock on Saturday, July 1, a jazz combo would appear at the Civic Auditorium. No error
30 King Etheldred tried to put a stop to the endless wars between England and Denmark by giving in to Danish demands for land and ransom. No error

31 Although easily trained when young, chimpanzees are difficult to handle after the age of eight. Gorillas, on the other hand, are mistakenly believed to be difficult at any age. No error

32 The address by Senator Throckmorton will be printed in tomorrow’s newspaper. No error

33 “Mire, as well as other pets, need some peace and quiet, but they shouldn’t be left entirely alone,” advised Dr. Crane, the veterinarian. No error

34 The intricately sculptured bronze doors by Rodin in the Tokyo National Art Museum were called “the gates to Paradise” by the Chinese ambassador. No error

35 The children asked what they should do when a bird falls from its nest?

36 Henry James insisted that he had remained forever American, a writer whose sensibility had been formed in the light of Emerson and in the shadow of Lincoln. No error

37 “In times of danger,” emphasized the biologist. “All vertebrates will respond instinctively by fleeing or by fighting in order to preserve themselves from harm.” No error

38 For the luncheon, Mrs. Gold used an Irish linen tablecloth, sterling from England, and her favorite china teapot. No error

39 Miss Andrews said, “Avoid overworked expressions such as ‘a flash in the pan.’” No error

Go on to the next page.
40 One difficulty a Geophysicist has in detecting underground nuclear explosions is differentiating between nuclear explosions and earthquakes. No error

41 Posters with such slogans as, “Cover your mouth when you cough” and “Carry a clean handkerchief” filled the hallways of Dawson High during the health campaign. No error

42 At the turn of the century, the gracefully curving white plumes of the egret frequently ornamented lady’s hats.

43 Judy asked, “What are the words to that pretty ode to nature that begins ‘How now, brown cow?’” No error

44 As a result of increased trading by institutional investors, members of the “New York Stock Exchange” are considering a change in their specialist systems. No error

45 Justice Botwell of the Supreme Court handed down the majority decision in January, 1965. No error

STOP. If you finish before time is called, check your work on Part II. Do not go back to Part I or turn to any other test in this book.
English Expression

Part I Directions

In each sentence find what is wrong, if anything.
If there is an error, decide which underlined part must be changed to make the sentence correct.
If there is no error, the answer is D.

Find the row of circles on your answer sheet which has the same number as the sentence.
In this row, mark the circle having the same letter as the answer you have chosen.

EXAMPLE 1
Betty done her homework and then went out to play.

A B C

to play. No error Answer
D

In this sentence, the underlined part lettered A is incorrect, so circle A is marked.

EXAMPLE 2
The Chinese were the first to make eyeglasses.

A B C

No error Answer
D

There is no error in this sentence, so circle D is marked.

STOP. Wait for further directions.
Part I: 20 minutes: 40 questions

1. The scouts had hiked most nearly a mile before they realized that they had chosen the wrong trail. No error

2. Seeing the chalkboard clearly is especially difficult for them who need glasses. No error

3. On account of it was late, Mike telephoned to ask if he could spend the night at his uncle's house. No error

4. Of all the nation-states in seventeenth-century Europe, France was undoubtedly the more powerful. No error

5. Frightened by a changing world that he could not understand, Hayden withdrew to a cabin in the Maine woods. No error

6. Deer will travel as great a distance to have reached saltlicks as they will to reach water. No error

7. Forming a large circle around the fountain was large stone benches, where the office workers usually sat and ate their lunches. No error

8. The ballerina moved gracefully, but the audience was critical of her partner's lack of precision during the performance. No error

9. The crowd grew so angry and became so noisy that Mr. Ardell could not finish his speech. No error

10. To unite Europe, Charles V would of had to weaken the power of France. No error

11. The arrival of human hunters, rather than changes in climate, maybe caused the mammoth to become extinct. No error

12. Because it was only us students who said that we were old enough to select our own literature books, the principal was unimpressed. No error
The officers were eager to hire Mr. Aduno because they thought he was capable to be president of the company some day.

No error

Never had an artist been faced against more opposition than was Caruthers when he exhibited his abstract paintings in the conservative New England town.

No error

During the sixties our State Department opposed communism with a policy designed to contain communism within its existing boundaries. No error

Early in this century, much of Florida's most beautiful birds were threatened with extinction because of widespread hunting by commercial users of plumes.

No error

To many people the Golden Gate Bridge in San Francisco is the most beautiful bridge in all of the world. No error

Jonathan Swift felt like a fictional book of travels would be a good medium for satirizing human pride. No error

If one studies the report prepared by the committee on housing, they can easily understand the predicament of low-income families. No error

At the turn of this century, the United States had scarcely no more than one hundred and forty miles of paved roads.

No error

Unfortunately, many politicians believe that they alone know what is best for mankind. No error

During Poe's lifetime neither his short stories nor his poetry was widely read, but both became influential later, especially in France. No error
23 The psychology student said that he could conduct his study only if the teacher would leave the children play as they normally do. No error

24 The intern's curiosity about disorders of the lungs were much greater than his interest in heart ailments. No error

25 According to Machiavelli, a ruler must be confident that he is superior over his people. No error

26 To both the committee and I, Mr. Cummings' proposal seems very impractical and unnecessarily expensive. No error

27 Few men in history have realized the Platonic ideal of the philosopher-king as fully as did Marcus Aurelius. No error

28 Though rock formations do not provide completely reliable information of the earth's development, they are an invaluable source of some kinds of data. No error

29 A bakery in Victorian London was what one might call an industrial establishment since they produced loaves by the thousands. No error

30 The novel ends as Colonel French waves farewell to the old sergeant. No error

31 Surprisingly, coconuts are far more valuable as a source of coconut oil than as a food. No error

32 Unless the government will raise taxes again next year, the merchants of Zurich will prosper. No error

33 The most recent census of Guatemala reveals that nearly sixty per cent of the total population is Indian. No error

34 Some people would rather adopt the first opinion they hear expressed than take the time and care that an informed judgment require. No error
35 The amount of modern artists employing the techniques of pop art rose steadily during the sixties. No error

36 Because of increasing congested highways, the development of rapid transit systems has become even more urgent. No error

37 Man is perhaps remarkable chiefly for his ability of adapting to a great variety of circumstances and events. No error

38 A transit strike in such industrial centers like New York could hurt business in much of the rest of the nation. No error

39 Malinowski and his followers changed anthropology from the largely antiquarian pursuit it had been into the analytical discipline it is today. No error

40 If everyone would take care of their own job, the set for the play could be built by tonight. No error

STOP. If you finish before time is called, check your work on this part. Do not go on to Part II or turn to any other test in this book.

Part II Directions
Beneath each sentence you will find four ways of writing the underlined part.
Choose the answer that makes the best sentence. Then find the row of circles on the answer sheet that has the same number as the sentence. In that row, mark the circle having the same letter as the answer you have chosen.
Answer A is always the same as the underlined part and is sometimes the correct answer.

EXAMPLE 1
Where did you leave your baseball at?
A Where did you leave your baseball at?
B Where at did you leave your baseball?
C Where did you leave your baseball by?
D Where did you leave your baseball?
Answer D makes the best sentence in this example, so circle D is marked.

EXAMPLE 2
Since Jean's bicycle was broken, Hank gave her his to use on the Girl Scout hike.
A gave her his to use
B give her his to use
C gave her his for using
D shall have given her his for using
Since answer A makes the best sentence, circle A is marked.

STOP. Wait for further directions.
Part II: 20 minutes; 25 questions

1. The Smiths were so impressed with the play that they wanted to see it again the next week.
   A. so impressed with the play that they wanted to see
   B. so impressed with the play as to want to see
   C. impressed enough with the play to want seeing
   D. impressed by the play so as to want to see

2. Mike enjoys playing golf, listening to music, and to go to the theater.
   A. playing golf, listening to music, and to go
   B. playing golf, listening to music, and going
   C. golfing, listening to music, and to go
   D. golfing, music, going

3. But for the exception of John's, all of the furniture designed by the students is contemporary in design.
   A. But for the exception of John's
   B. If one excepts John
   C. Except for John's
   D. Excepting John

4. Ancient Etruscan sculptors preferred to use clay or bronze rather than stone.
   A. preferred to use
   B. would rather have been using
   C. preferred to have used
   D. would rather use

5. Large vertebrates could not breathe unless that their lungs were partitioned into millions of tiny sacs.
   A. unless their lungs were
   B. if their lungs were not
   C. without their lungs being
   D. but for lungs that were

6. Had the art collector not been independently wealthy, he could not have been following his own judgment with such scrupulous independence.
   A. cannot have been following
   B. cannot have followed
   C. could not follow
   D. could not have followed

7. On Sunday we bathed the dog, which he needed very badly.
   A. bathed the dog, which he needed very badly
   B. bathed the dog, which he very badly had need of
   C. gave the dog a badly needed bath
   D. gave the dog a bath, being badly needed

8. Although he spoke for an hour, the orator did not need to refer back once to his notes.
   A. did not need to refer back once
   B. did not once have need of referring
   C. did not once need to refer
   D. did not need to refer once back

9. The sphere is the strongest geometrical form and so can better withstand internal pressure.
   A. can better withstand
   B. is better at withstanding
   C. is best to withstand
   D. can best withstand

10. Probably because of improved nutrition, young people today mature physically at an earlier age than in the nineteenth century.
    A. in the nineteenth century
    B. did children in the nineteenth century
    C. did the nineteenth century
    D. nineteenth-century children have
11. A piece of sandstone, scraped, will produce sand much like that found on beaches.
   A. A piece of sandstone, scraped, will produce sand much like that found on beaches.
   B. When you scrape it, sand will fall from a piece of sandstone much like that found on beaches.
   C. When scraped, a piece of sandstone, much like that found on beaches, will produce sand.
   D. A piece of sandstone, when scraped, will produce sand much like that found on beaches.

12. Carefully sifting rubble for relics develops both caution and alertness in the archaeological beginner.
   A. Carefully sifting rubble for relics develops.
   B. By carefully sifting rubble for relics, it develops.
   C. Careful sifting rubble for relics develops.
   D. Carefully sifting rubble for relics, this develops.

13. Sara's garden is more colorful than Mrs. Smith.
   A. more colorful than Mrs. Smith
   B. more colorful than Mrs. Smith's
   C. the more colorful when compared with Mrs. Smith
   D. the more colorful of her and Mrs. Smith's

14. Horace's mother did not like him associating with the young people who had excluded Martin from the school yearbook committee.
   A. him associating
   B. him to associate himself
   C. him to associate
   D. that he was associating

15. Actually, Harrison's books are much more interesting as historical documents than novels.
   A. novels
   B. they are novels
   C. as a novel
   D. as novels

16. The pull of gravity on Mars is only slightly greater than that on Mercury.
   A. that on
   B. the one on
   C. that of
   D. of

17. The Victorian age produced a great deal of poetry and fiction, and relatively little drama was produced in it.
   A. and relatively little drama was produced in it
   B. but with relatively little drama
   C. and relatively little drama was produced by it
   D. but relatively little drama

18. Free at last to choose their own form of government, the plague of civil strife has come to many new African nations instead.
   A. the plague of civil strife has come to many new African nations instead
   B. nevertheless civil strife has plagued many new African nations
   C. many new African nations have been plagued by civil strife instead
   D. instead many new African nations have the plague of civil strife

Go on to the next page.
19 The fact that more than half the total revenues earned by American films comes from overseas greatly influence the content of these films.

A. comes from overseas greatly influence
B. comes from overseas greatly influences
C. come from overseas greatly influence
D. come from overseas greatly influences

20 Resorting to military force is more often a confession of weakness than a proving of strength.

A. more often a confession of weakness than a proving
B. often more of a confessing of weakness than a proving
C. often more of a confession of weakness than a proof
D. more often a confession of weakness than a proof

22 Astronomers have long known that at its fullest the moon reflects more sunlight per unit area than it does at other times.

A. Astronomers have long known that at its fullest
B. When full, astronomers have long known that
C. A long-known fact to astronomers is, at its fullest,
D. At its fullest, astronomers having long known.

23 Just because atomic energy is available as a source of power is no guarantee that atomic power is economically feasible.

A. Just because atomic energy is available
B. Atomic energy just being available
C. Although atomic energy is available
D. The mere availability of atomic energy

24 Measles is one of the most recent infectious diseases that yield to medical science.

A. that yield
B. yielding
C. which have yielded
D. to yield

25 Unlike most other occupations, a doctor does not begin to earn a living until he is in his thirties.

A. most other occupations
B. most other people
C. any other person
D. other occupations
APPENDIX C

STUDENT PERCEPTION OF TEACHER EFFECTIVENESS FORM
NOTE TO STUDENTS: Following is a list of statements concerning qualities that, taken together, tend to make any teacher the sort of teacher that he is. In order to obtain information which may lead to improvement of instruction, you are asked to rate your teacher on the indicated qualities by darkening one of the spaces on the line at the point which most nearly describes your feelings. FOR EXAMPLE: If you mildly agree with the statement that your teacher knows how to put the subject across in a lively way, darken the space as indicated:

My teacher knows how to put the subject across in a lively way.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Mildly Agree</th>
<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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Fill in the chosen space solidly. Make no stray marks. Read each statement carefully.

TEACHER: ___________ GRADE: ________ YOUR SEX: ___________


1. We often discuss the kind of evidence that is behind the "truths" presented in this course.

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<thead>
<tr>
<th>Strongly Agree</th>
<th>Mildly Agree</th>
<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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2. My teacher lets the class discussions get too far off the subject.

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<tr>
<th>Strongly Agree</th>
<th>Mildly Agree</th>
<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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3. My teacher sometimes gives students a choice of how to do an assignment.

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<th>Strongly Agree</th>
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<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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4. My teacher usually seems sure of himself in front of the class.

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<tr>
<th>Strongly Agree</th>
<th>Mildly Agree</th>
<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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5. My teacher is hard to reach for outside help and guidance.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Mildly Agree</th>
<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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6. My teacher is admired by most of his students.

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<th>Strongly Agree</th>
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<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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7. We do not read subject-related material in books and periodicals outside the class.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Mildly Agree</th>
<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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8. My teacher uses films, filmstrips, and/or transparencies which are helpful aids to understanding the textbook.

<table>
<thead>
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<th>Strongly Agree</th>
<th>Mildly Agree</th>
<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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9. I often feel that my teacher is not interested in my answer to a question.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Mildly Agree</th>
<th>Mildly Disagree</th>
<th>Strongly Disagree</th>
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</tr>
<tr>
<td>10. My teacher does not admit his mistakes.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>11. My teacher is warm and friendly toward his students.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>12. My teacher sets a good example for the students.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>13. When reading the textbook we are expected to look for the main ideas and for the evidence that supports and describes them.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>14. Some type of audio-visual equipment or demonstration is used in this class at least once a week.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>15. My teacher frequently encourages student contributions during class.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>16. My teacher knows a good deal about his subject.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>17. My teacher is not concerned about whether the students learn the material.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>18. My teacher is fair in testing and grading.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>19. My teacher discourages differing viewpoints on issues we discuss.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>20. My teacher knows how to put the subject across in a lively way.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>21. I do not like to answer discussion questions in class because of my teacher's possible negative response if my answer is incorrect.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>22. My teacher usually gets confused by unexpected questions.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>23. My teacher rarely seems to order the students around.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
<tr>
<td>24. My teacher rarely goes over a test the day after grading it.</td>
<td>Strongly Agree</td>
<td>Mildly Agree</td>
<td>Mildly Disagree</td>
</tr>
</tbody>
</table>
PERSONAL

Name: Yvonne Marie Henry French
Date of Birth: December 4, 1934
Birthplace: Cincinnati, Ohio
Parents: Ann Louise Lairson and the late Charles John Henry Cincinnati, Ohio
Husband: Wilbur L. French Chicago, Illinois
Children: Brent Arthur, James Wilbur Angelica Anne

EDUCATION

High School: Holmes High School Covington, Kentucky, 1953
B. S.: Louisiana State University
        Baton Rouge, Louisiana, 1972
        Major: Chemistry Education
        Minor: Biology Education
M. Ed.: Louisiana State University
        Baton Rouge, Louisiana, 1975
        Major: Supervision and Administration of Education
        Minor: Zoology
Ph. D.: Louisiana State University
        Baton Rouge, Louisiana, 1979
        Major: Education
        Minor: Zoology
PROFESSIONAL EXPERIENCE

1972-1973
Episcopal High School
Baton Rouge, Louisiana
Middle School Science Teacher

1973-1975
Episcopal High School
Baton Rouge, Louisiana
Upper School Science Teacher
Cochairman, Science Department

1975-1979
Episcopal High School
Baton Rouge, Louisiana
Upper School Science Teacher
Head, Science Department

PROFESSIONAL ORGANIZATIONS

American Association for the Advancement of Science
Kappa Delta Pi, National Education Honorary Society
National Science Teachers' Association
Phi Delta Kappa, National Educational Society
Phi Kappa Phi, National Honorary Society
Candidate: Yvonne Marie French

Major Field: Education

Title of Thesis: A Study Of The Relationships Between Student Achievement And Student Perception Of Teacher Effectiveness

Date of Examination: July 2, 1979

Approved:

[Signatures]

Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]