



PRACTICE TEST

ISEE®

UPPER LEVEL



Copyright © 2012 by Educational Records Bureau. All rights reserved. No part of this book may be reproduced, redistributed, or transmitted in any form or by any means, electronic, manual, photocopying, recording or by any information storage and retrieval system, without prior written permission of the Educational Records Bureau.

Using the Practice Test

The Practice Test is the same format as the actual ISEE. In each section, the number of questions and the number of minutes that you have to answer the questions are listed under the name of the section. On the actual ISEE, however, there are additional questions which will not be included on your score report, but which may be used on future tests. Thus, the timings for the Practice Test are slightly shorter than on the actual ISEE, since you are answering only questions that will be used to determine your sample score. The chart below shows the number of questions on each section of the Practice Test and the actual ISEE, and how many minutes you should allow for each section of both tests.

PRACTICE TEST AND ACTUAL TEST—UPPER LEVEL

Sections	Practice Test	Actual ISEE
Verbal Reasoning	35 Questions—17.5 Minutes	40 Questions—20 Minutes
Quantitative Reasoning	32 Questions—30 Minutes	37 Questions—35 Minutes
Reading Comprehension	30 Questions—30 Minutes	36 Questions—35 Minutes
Mathematics Achievement	42 Questions—36 Minutes	47 Questions—40 Minutes
Essay	2-Page Limit—30 Minutes	2-Page Limit—30 Minutes

Although the timings are not the same on the Practice Test and the actual ISEE, since each section on the actual test is carefully timed, it is important to follow the timing instructions on the Practice Test so you can learn how to pace yourself for the actual test.

Remember that the time it takes to read the brief directions at the beginning of each section is NOT included in the testing time. When you take the actual test, you will be allowed a five-minute break before the Reading Comprehension section and another five-minute break following the Mathematics Achievement section. On the actual ISEE, you will take each section in the same order in which it appears in this Practice Test. Each section must be taken without stopping; therefore, we strongly encourage you to take the Practice Test exactly the same way so that the experience will be realistic and meaningful. Also, the score you calculate when you check your answers will be more accurate.

Because we think it will help you to know exactly how the test administrator will instruct you on the day of the test, we have included the general directions that will be read to you before the test starts. (These directions are on the next page.) Reading these directions carefully will help you know what to expect.

When you are ready to begin, try to create the following realistic test conditions.

- Find a quiet, well-lighted space with an appropriate writing surface.
- Ask an older person (parent, sibling, friend) to act as test administrator to
 - read the general directions;
 - monitor your time;
 - write down the starting time for each section;
 - tell you when 5 minutes remain in each section; and
 - tell you when to stop.

You will use a copy of the actual answer sheet to mark your answers for the Practice Test. The answer sheet is in Appendix B. You will also use the pre-lined pages in Appendix B for your essay. Use the appropriate parts of the answer sheet and leave the remaining parts blank. For example, leave “Test Administrator” and “ID Number” blank. It may be more convenient for you to photocopy the answer sheet so that you don’t have to turn back and forth between the Practice Test and Appendix B.

Test Directions

After you are seated in the test room and the test administrator announces that you are ready to begin, he or she will give you your test booklet and an answer sheet. (Please refer to the answer sheet on pages 139–142). Some of the information on this answer sheet may already be filled in for you, but if not, the test administrator will help you. After you complete the test booklet itself, the administrator will give you your essay topic to write on the last two pages of the answer sheet. There will be two 5-minute breaks during the test.

The general directions the test administrator will read to you before you begin the separate sections of the actual ISEE are below. The administrator will not begin timing you until after he or she has finished reading them and answering any appropriate questions. These are the same directions you should use on the Practice Test. It is important to look at them now because they contain important information.

Directions

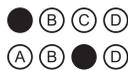
The ISEE measures skills and abilities commonly used by students in school. Your test booklet contains four sections: Verbal Reasoning; Quantitative Reasoning; Reading Comprehension; and Mathematics Achievement. There are several different versions for each test, so the questions in your test booklet will probably be different from the questions that others in this room are answering. Because these tests are given to students in more than one grade, don't be surprised if you notice that some of the questions are very easy for you, or that others are very difficult.

Read the directions and samples printed at the beginning of each test carefully. Work as quickly as you can without becoming careless. Do not spend too much time on any question that is difficult for you to answer since all questions are scored equally. Instead, skip it and answer all of the questions that you can. Then, if you have time, return to any questions you may have skipped.

Please select the best choice for each question. On this test, there is no penalty for an incorrect answer.

Be sure to record all your answers on the answer sheet. Mark only one answer for each question, and make every mark heavy and dark, as in these examples.

Sample Answers



If you decide to change one of your answers, be sure to erase the first mark completely. Don't worry if you find that there are more answer spaces on the answer sheet than there are questions in this booklet. As you work, make sure that the number of the question that you are answering matches the number on the answer sheet section that you are marking.

Please do not open the booklet until you are told to do so.

ISEE[®]

Verbal Reasoning

UPPER LEVEL

Practice Test



Copyright © 2012 by Educational Records Bureau. All rights reserved. No part of this book may be reproduced, redistributed, or transmitted in any form or by any means, electronic, manual, photocopying, recording or by any information storage and retrieval system, without prior written permission of the Educational Records Bureau.

Section 1 Verbal Reasoning

35 Questions

Time: 17.5 minutes

This section is divided into two parts that contain two different types of questions. As soon as you have completed Part One, answer the questions in Part Two. You may write in your test booklet. For each answer you select, fill in the corresponding circle on your answer document.

Part One — Synonyms

Each question in Part One consists of a word in capital letters followed by four answer choices. Select the one word that is most nearly the same in meaning as the word in capital letters.

SAMPLE QUESTION:

Sample Answer

DISPERSE:

(A) (B) ● (D)

- (A) conceal
- (B) excuse
- (C) scatter
- (D) translate

Part Two — Sentence Completion

Each question in Part Two is made up of a sentence with one or two blanks. One blank indicates that one word is missing. Two blanks indicate that two words are missing. Each sentence is followed by four answer choices. Select the one word or pair of words that best completes the meaning of the sentence as a whole.

SAMPLE QUESTIONS:

Sample Answers

Never -----, the dishes Martha prepared were always highly seasoned.

● (B) (C) (D)

- (A) bland
- (B) durable
- (C) plentiful
- (D) spicy

When the young politician took office, she was -----, but she felt ----- by the time her first term ended.

(A) (B) (C) ●

- (A) disappointed . . . confused
- (B) energetic . . . excited
- (C) indifferent . . . idealistic
- (D) inexperienced . . . knowledgeable



Part One—Synonyms

Directions: Select the word that is most nearly the same in meaning as the word in capital letters.

1. INITIAL:

- (A) first
- (B) mutual
- (C) orderly
- (D) proper

2. MANNEQUIN:

- (A) actor
- (B) aide
- (C) leader
- (D) model

3. AGENDA:

- (A) accident
- (B) composition
- (C) duty
- (D) program

4. ADVERSARY:

- (A) agent
- (B) coward
- (C) opponent
- (D) rascal

5. PERSONIFY:

- (A) argue
- (B) fulfill
- (C) replace
- (D) represent

6. EQUITY:

- (A) fairness
- (B) harshness
- (C) humor
- (D) knowledge

7. ANTHOLOGY:

- (A) agreement
- (B) collection
- (C) disease
- (D) extension

8. OPAQUE:

- (A) antique
- (B) clouded
- (C) exhausted
- (D) pretentious

9. PALPABLE:

- (A) docile
- (B) political
- (C) sluggish
- (D) tangible

10. FATHOM:

- (A) comprehend
- (B) hasten
- (C) question
- (D) trick

11. DIMINISH:

- (A) eliminate
- (B) evade
- (C) examine
- (D) reduce

12. PERPETUATE:

- (A) continue
- (B) convince
- (C) enclose
- (D) introduce

13. ADMONISH:

- (A) delay
- (B) organize
- (C) suffer
- (D) warn

14. DEPICT:

- (A) describe
- (B) discard
- (C) include
- (D) reverse

15. EPITOME:

- (A) embodiment
- (B) equilibrium
- (C) resilience
- (D) viewpoint

16. TRANSITORY:

- (A) active
- (B) essential
- (C) fleeting
- (D) immediate

17. INCITE:

- (A) explain
- (B) investigate
- (C) provoke
- (D) request

Part Two—Sentence Completion

Directions: Select the word or word pair that best completes the sentence.

18. Poet-novelist Rita Dove, former United States Poet Laureate, was the ----- of the 1966 Heinz Award in the category of arts and humanities.
- (A) contractor
(B) hero
(C) mentor
(D) recipient
19. Alfred Jarry's first play, *Ubu Roi*, is considered the first work of the theater of the absurd; although it caused a scandal when it opened in 1896, today it is ----- for its innovative plot.
- (A) acclaimed
(B) inspected
(C) rejected
(D) suspected
20. Many people raise their voices in an argument, as though higher volume ----- a greater ability to persuade.
- (A) balances
(B) necessitates
(C) provides
(D) recognizes
21. In the second half of the nineteenth century, the number of American bison, which were once -----, began to decline as the bison became a source of food for westward-moving pioneers and railroad workers.
- (A) abundant
(B) limited
(C) unpopular
(D) vibrant
22. Unlike other great apes, which are social, orangutans are ----- creatures except for playful juveniles and mothers with babies.
- (A) contented
(B) friendly
(C) mysterious
(D) solitary
23. The article on gene splicing was so ----- that only a handful of the students were able to understand it.
- (A) contrite
(B) esoteric
(C) functional
(D) genuine

24. The first African American actor to attain international ----- was Ira Aldridge, one of the leading Shakespearean performers of the 1800s.
- (A) permanence
(B) provocation
(C) rejection
(D) renown
25. Ancient cave paintings of the sun, the moon, and wild animals ----- to the inherent human desire and ability to portray the environment.
- (A) cater
(B) graduate
(C) react
(D) testify
26. Each afternoon the shepherd would drive his flock along the narrow road, effectively ----- the way for an hour.
- (A) obstructing
(B) plundering
(C) renouncing
(D) transplanting
27. The city council looked at the proposal for a new library with an indifference that bordered on -----.
- (A) contemplation
(B) hilarity
(C) scornfulness
(D) veneration
28. The art of Frida Kahlo was strongly ----- by her lifelong interest in and ----- with Mexican folklore and culture.
- (A) absorbed . . . irritation
(B) influenced . . . fascination
(C) repelled . . . agreement
(D) undermined . . . unhappiness
29. Like most other ----- medical conditions, arthritis is not curable; physicians do their best, however, to ----- its symptoms.
- (A) chronic . . . ameliorate
(B) complicated . . . mimic
(C) imaginary . . . minimize
(D) temporary . . . extend
30. Although much of the worst pollution has been ----- in the United States, traces of many toxic chemicals still -----.
- (A) discussed . . . escape
(B) eliminated . . . persist
(C) exaggerated . . . remain
(D) foreseen . . . arise
31. Queen Victoria had mixed opinions on the emancipation of women: while she ----- education for women, she ----- their right to vote.
- (A) condemned . . . hindered
(B) encouraged . . . recognized
(C) fostered . . . opposed
(D) founded . . . emphasized

32. The ----- observer of a lichen growing on a rock would never suspect that it was a ----- of life-forms interacting with one another.
- (A) casual . . . composite
(B) expert . . . laboratory
(C) inquiring . . . barrier
(D) knowledgeable . . . relative
33. If the authors had written with more ----- and avoided such ----- language, their articles would have had more power.
- (A) brilliance . . . intelligent
(B) deliberation . . . careful
(C) excess . . . emotional
(D) restraint . . . sentimental
34. Despite the ----- I felt at the thought of meeting Luisa, our business was transacted in an atmosphere that was clearly -----.
- (A) apprehension . . . congenial
(B) excitement . . . jubilant
(C) optimism . . . exhilarating
(D) reservations . . . antagonistic
35. Because the caretaker had led a ----- lifestyle for most of his life, his million dollar ----- to the settlement house amazed the trustees.
- (A) frugal . . . bequest
(B) generous . . . legacy
(C) lavish . . . generosity
(D) unique . . . entreaty



ISEE®

Quantitative Reasoning

UPPER LEVEL

Practice Test



Copyright © 2012 by Educational Records Bureau. All rights reserved. No part of this book may be reproduced, redistributed, or transmitted in any form or by any means, electronic, manual, photocopying, recording or by any information storage and retrieval system, without prior written permission of the Educational Records Bureau.

Section 2

Quantitative Reasoning

32 Questions

Time: 30 minutes

This section is divided into two parts that contain two different types of questions. As soon as you have completed Part One, answer the questions in Part Two. You may write in your test booklet. For each answer you select, remember to fill in the corresponding circle on your answer document.

Any figures that accompany the questions in this section may be assumed to be drawn as accurately as possible EXCEPT when it is stated that a particular figure is not drawn to scale. Letters such as x , y , and n stand for real numbers.

Part One — Word Problems

Each question in Part One consists of a word problem followed by four answer choices. You may write in your test booklet; however, you may be able to solve many of these problems in your head. Next, look at the four answer choices given and select the best answer.

EXAMPLE 1:

What is the value of the expression $2 \times (3 + 4) \div (2 + 5)$?

- (A) 0
- (B) 2
- (C) 7
- (D) 14

Sample Answer

Ⓐ ● Ⓒ Ⓓ

The correct answer is 2, so circle B is darkened.

Part Two — Quantitative Comparisons

All questions in Part Two are quantitative comparisons between the quantities shown in Column A and Column B. Using the information given in each question, compare the quantity in Column A to the quantity in Column B, and choose one of these four answer choices:

- (A) The quantity in Column A is greater.
- (B) The quantity in Column B is greater.
- (C) The two quantities are equal.
- (D) The relationship cannot be determined from the information given.

EXAMPLE 2:	<u>Column A</u>	<u>Column B</u>	<u>Sample Answer</u>
	50% of 80	40% of 100	(A) (B) ● (D)
The quantity in <u>Column A</u> (40) is the same as the quantity in <u>Column B</u> (40), so circle C is darkened.			
<hr/>			
EXAMPLE 3:	<u>Column A</u>	<u>Column B</u>	<u>Sample Answer</u>
	x	$-x$	(A) (B) (C) ●
Since x can be any real number (including 0 or negative numbers), there is not enough information given to determine the relationship, so circle D is darkened.			



Part One—Word Problems

Directions: Choose the best answer from the four choices given.

1. If $n^* = 4n + 3$, what is the value of 8^* ?
 - (A) 35
 - (B) 40
 - (C) 44
 - (D) 46

2. If $x - y = 3$, then which expression is equal to y ?
 - (A) $x + 3$
 - (B) $x - 3$
 - (C) $-x + 3$
 - (D) $-x - 3$

3. If the sum of all integers from 1 to 1,000, inclusive, is x , then which expression represents the sum of all integers from 1 to 998, inclusive?
 - (A) $x - 1,999$
 - (B) $x - 999$
 - (C) $x + 999$
 - (D) $x + 1,999$

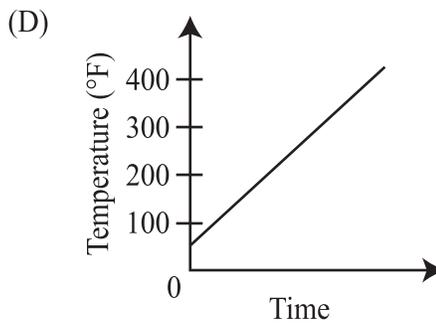
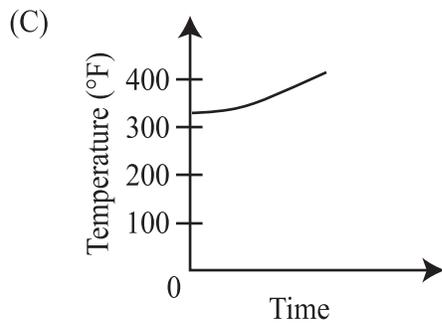
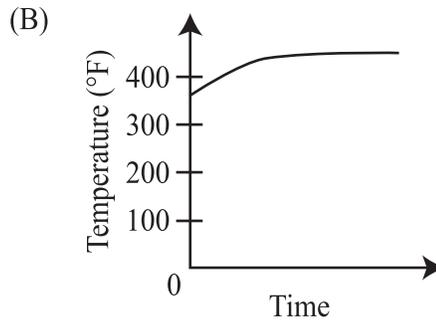
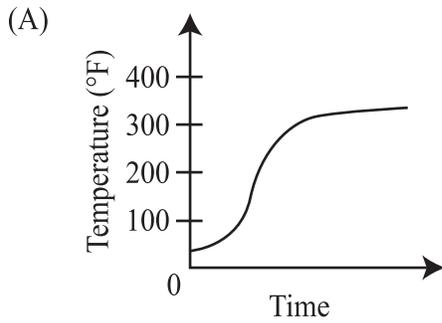
4. If the length of the base of a triangle is increased by 10 percent and the height is decreased by 20 percent, what is the percent decrease in the area of the triangle?
 - (A) 6%
 - (B) 8%
 - (C) 10%
 - (D) 12%

5. If m is a positive integer and $(x + 7)^2 = x^2 + mx + 49$, what is the value of m ?
 - (A) 7
 - (B) 14
 - (C) 28
 - (D) 49

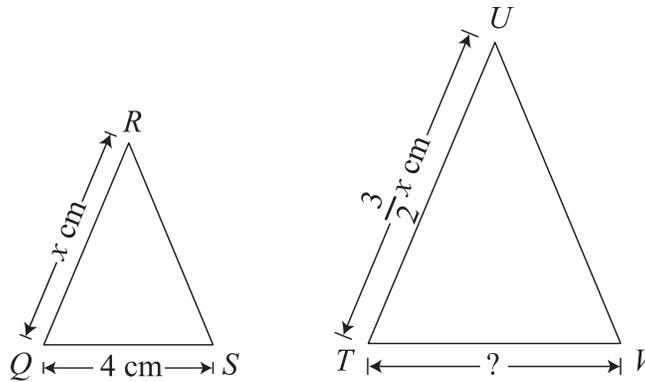
6. Joshua was trying to calculate the mean of his test scores. He did not know what he had scored on each of the first 4 tests but knew that the sum of his scores was 370. If Joshua scored an 85 on his fifth test, then what was the mean of all 5 scores?
 - (A) 85.00
 - (B) 88.75
 - (C) 91.00
 - (D) 92.50

7. A rectangle has an area of 110 inches². If the length and the width of the rectangle are measured in whole inches, what is the least possible perimeter of the rectangle?
 - (A) 21 inches
 - (B) 27 inches
 - (C) 42 inches
 - (D) 54 inches

8. A cool potato is placed in a hot (350°F) oven to cook for one hour. Which graph best represents what happens to the temperature of the potato as it cooks during the hour?



9. Triangle QRS is similar to triangle TUV .



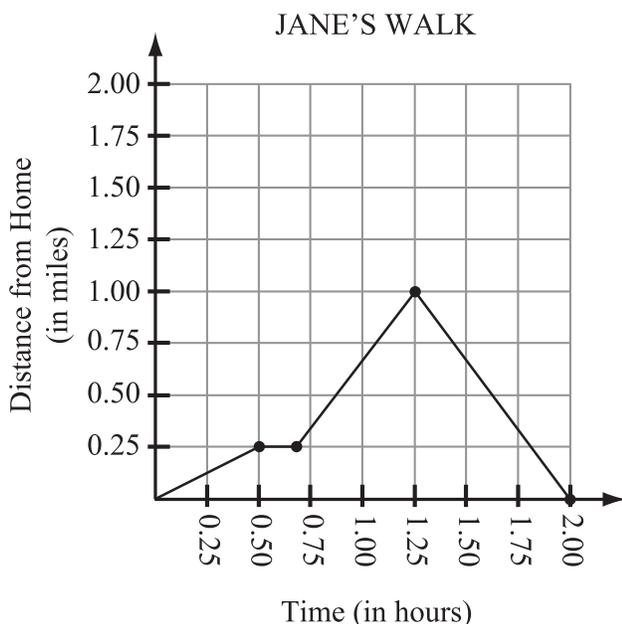
What is the length of side TV ?

- (A) 4 cm
- (B) 6 cm
- (C) $4x$ cm
- (D) $6x$ cm

10. What is the value of the expression $\frac{3(3^2 + 3^3)}{9(3+9)}$?

- (A) 0
- (B) 1
- (C) 3
- (D) 9

11. The graph shows the distance Jane was from home as a function of time during a walk.



At one point in the walk, Jane stopped for several minutes and waited for her friend. How far was Jane from her home when she stopped and waited for her friend?

- (A) 0.25 miles
- (B) 0.50 miles
- (C) 0.75 miles
- (D) 1.00 mile

12. Mrs. Garrett graded the tests of her 20 students. She then calculated the mean, median, mode, and range for the test scores. The table gives the value of each of these statistical measures.

STATISTICAL MEASURES	
Measure	Value
Mean	75
Median	80
Mode	80
Range	64

Mrs. Garrett decided to add 6 points to each of her student's test scores, and then she recalculated the values of each statistical measure. Which of the measures changed the least?

- (A) mean
- (B) median
- (C) mode
- (D) range

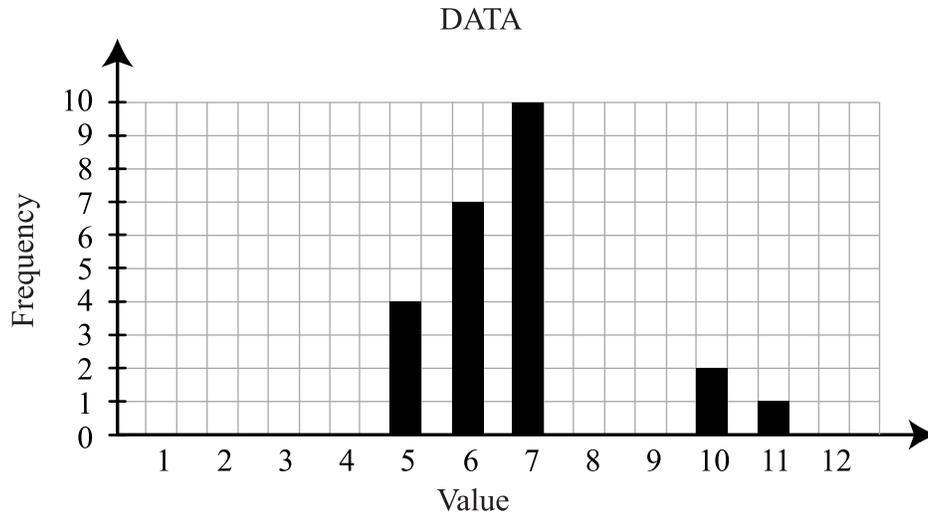
13. Jim and Maud are playing a game using number cubes. Each player rolls two number cubes, numbered 1 through 6, and the sum of the numbers is recorded.

- Jim receives a point if his sum is a 6.
- Maud receives a point if her sum is either 6 or 4.

Who has a greater probability of receiving a point?

- (A) Jim
- (B) Maud
- (C) Jim and Maud have the same probability of receiving a point.
- (D) There is not enough information given to determine the answer.

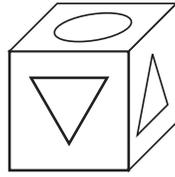
14. A scientist collects data. He determines both the mean of the data and the median of the data are equal to 7 and the data are symmetric about this value. He starts to create the bar graph shown but does not finish the graph.



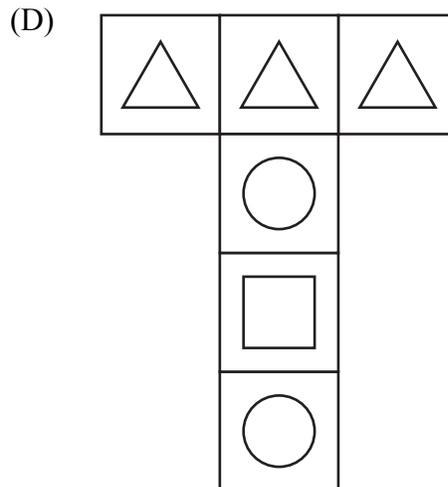
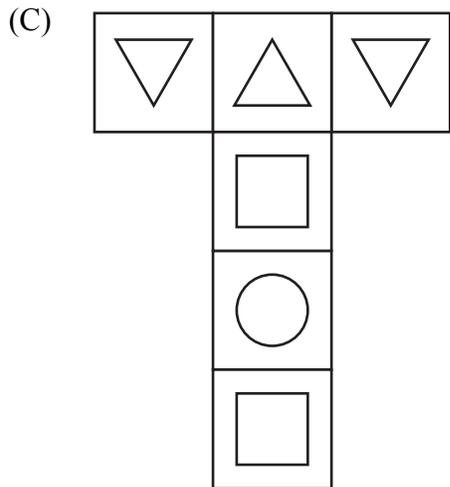
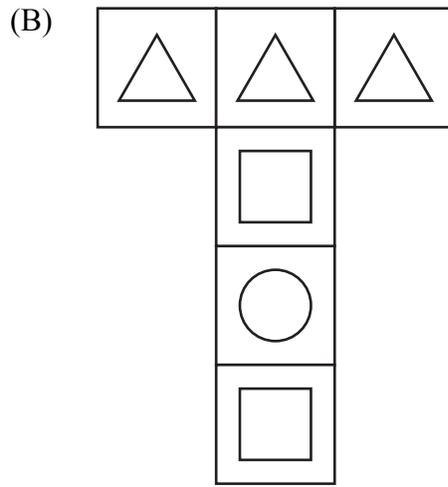
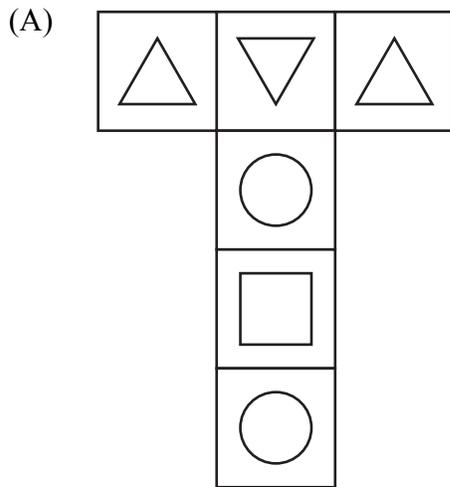
If the range of the data is 8 and the maximum value of the data is 11, then how many data points fall above the value 7?

- (A) 3
(B) 10
(C) 11
(D) 14
-
15. What is the maximum value for y , if $y = 2x^2 + 1$ for $-2 \leq x \leq 1$?
- (A) 1
(B) 3
(C) 9
(D) 17
16. If a is a factor of 9 and b is a factor of 24, which is the least value that ab must be a factor of?
- (A) 3
(B) 6
(C) 72
(D) 216
17. John and Erin were both jogging on the same path, each at a constant speed, and Erin at a faster speed than John. When Erin started jogging, John had jogged 500 meters. Which one piece of additional information, in meters per minute, would be needed to determine how long, in minutes, Erin had been jogging when she caught up with John?
- (A) John's speed
(B) Erin's speed
(C) the sum of John's and Erin's speeds
(D) the difference in John's and Erin's speeds

18. A cube is shown.



Which figure is a possible net for the cube?

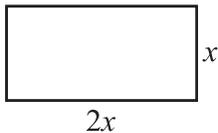
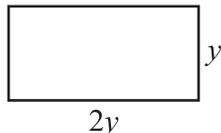


Part Two—Quantitative Comparisons

Directions: Using the information given in each question, compare the quantity in Column A to the quantity in Column B. All questions in Part Two have these answer choices:

- (A) The quantity in Column A is greater.
 (B) The quantity in Column B is greater.
 (C) The two quantities are equal.
 (D) The relationship cannot be determined from the information given.

	<u>Column A</u>	<u>Column B</u>
19.	$5 + 2 \times (4 + 3)$	19

Rectangle Q Rectangle R 

Note: Figures not drawn to scale.

The area of Rectangle Q is 18 cm^2 . The perimeter of Rectangle R is 30 cm.

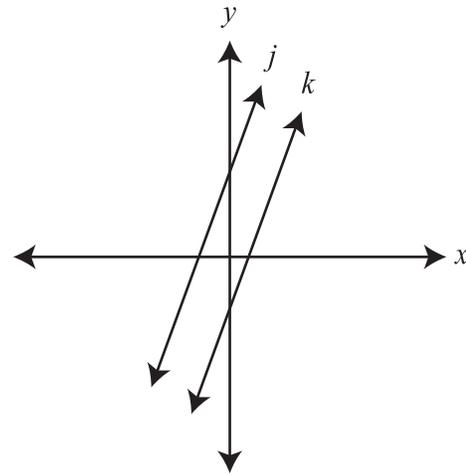
	<u>Column A</u>	<u>Column B</u>
20.	x	y

	<u>Column A</u>	<u>Column B</u>
21.	$(x - y)(x^2 + xy + y^2)$	$x^3 - y^3$

A parking meter filled with \$4.50 in dimes and quarters contains twice as many dimes as quarters.

(Note: 1 dime = \$.10; 1 quarter = \$.25)

	<u>Column A</u>	<u>Column B</u>
22.	The total value of the quarters	\$3.00



Line j is the graph of $y = 3x + 4$. Line j is parallel to line k .

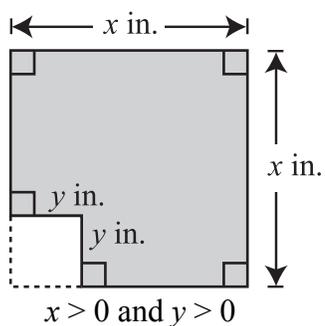
	<u>Column A</u>	<u>Column B</u>
23.	The slope of line k	-3

Answer choices for all questions on this page:

(A) The quantity in Column A is greater.
 (B) The quantity in Column B is greater.
 (C) The two quantities are equal.
 (D) The relationship cannot be determined from the information given.

The perimeter of a rectangle is 50 inches.

- | | <u>Column A</u> | <u>Column B</u> |
|-------------------------------|-----------------|-------------------------|
| 24. The area of the rectangle | | 144 inches ² |



Note: Figure not drawn to scale.

- | | <u>Column A</u> | <u>Column B</u> |
|-------------------------------|-----------------|--------------------------------------|
| 25. Area of the shaded region | | $x^2 - xy - y^2$ inches ² |

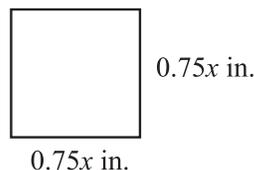
The product of 3 consecutive integers is 210.

- | | <u>Column A</u> | <u>Column B</u> |
|--|-----------------|-----------------|
| 26. The greatest of the 3 consecutive integers | | 10 |

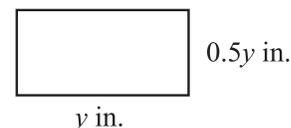
	<u>Column A</u>	<u>Column B</u>
--	-----------------	-----------------

- | | | |
|-----|-----------|-------------|
| 27. | $25n - 1$ | $25(n - 1)$ |
|-----|-----------|-------------|

Square A



Rectangle B



Note: Figures not drawn to scale.

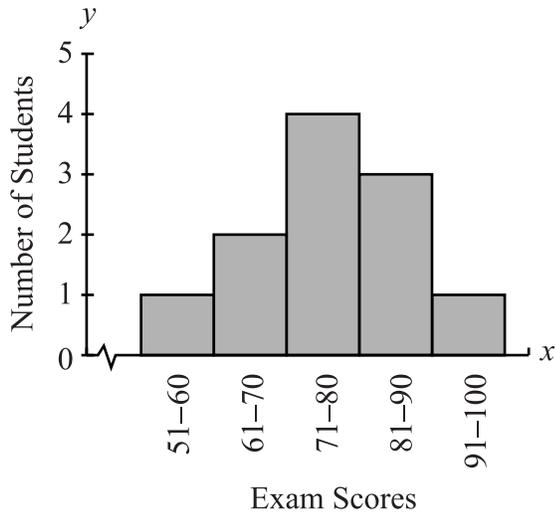
- | | <u>Column A</u> | <u>Column B</u> |
|-------------------------------|-----------------|------------------------------|
| 28. The perimeter of Square A | | The perimeter of Rectangle B |

A 6-sided number cube, numbered 1 to 6, is rolled and a coin is tossed.

- | | <u>Column A</u> | <u>Column B</u> |
|---|-----------------|--|
| 29. If a number less than 3 is rolled on the cube, the probability of the coin landing tails up | | If an odd number is rolled on the cube, the probability of the coin landing heads up |

Answer choices for all questions on this page:

- (A) The quantity in Column A is greater.
- (B) The quantity in Column B is greater.
- (C) The two quantities are equal.
- (D) The relationship cannot be determined from the information given.



The histogram shows exam scores of students in a mathematics class.

Column A

Column B

30. The median score The range of the scores

A jar contains 5 candies: 2 orange candies and 3 green candies. One candy is selected at random and replaced. Then a second candy is selected.

Column A

Column B

31. The probability that both candies selected are green The probability that the first candy selected is green

In February, apples were selling for \$1.50 a pound. In March, the price of apples was 10% higher than the February price. In April, the price of apples was 10% lower than the March price.

Column A

Column B

32. The price of apples in April \$1.50



ISEE®

Reading Comprehension

UPPER LEVEL

Practice Test



Copyright © 2012 by Educational Records Bureau. All rights reserved. No part of this book may be reproduced, redistributed, or transmitted in any form or by any means, electronic, manual, photocopying, recording or by any information storage and retrieval system, without prior written permission of the Educational Records Bureau.

Section 3

Reading Comprehension

30 Questions

Time: 30 minutes

This section contains five short reading passages. Each passage is followed by six questions based on its content. Answer the questions following each passage on the basis of what is stated or implied in that passage. You may write in your test booklet.



Questions 1–6

1 When I was younger, I was extremely
2 interested in freshwater biology and spent most
3 of my time dredging about in ponds and
4 streams, catching minute creatures and keeping
5 them in large jars. Among other things, I had
6 one jar full of caddis larvae, which camouflage
7 themselves by decorating their cocoons. The
8 caddis I had collected looked rather dull, for I
9 had collected them from a stagnant pool. They
10 had merely decorated the outside of their
11 cocoons with little bits of dead water plants.

12 I had been told by my friend, however, that
13 if you remove a caddis larva from its cocoon
14 and place it in a jar of clean water, it would
15 spin itself a new cocoon and decorate the
16 outside with whatever materials you supplied.
17 Deciding to experiment, I removed four of my
18 caddis larvae from their cocoons. Then I placed

19 them in a jar of clean water and lined the
20 bottom with tiny seashells. Later, to my
21 astonishment, the larvae had intricately
22 decorated the new cocoons with seashells.

23 I discovered that by moving the larvae to a
24 different jar with a new substance, they would
25 produce new multicolored cocoons. My
26 greatest triumph lay in forcing them to decorate
27 their cocoons with fragments of blue glass, then
28 red brick, and white seashells. Moreover, the
29 materials were put on in stripes.

30 I never remember feeling quite the same
31 sort of satisfaction as I did when I showed off
32 my red, white, and blue caddis larvae to my
33 friends. I think the poor creatures were really
34 rather relieved when they hatched and flew
35 away and could forget about the problems of
36 cocoon building.

1. The primary purpose of the passage is to
 - (A) explain the author’s childhood interest in biology.
 - (B) describe a discovery that excited the author’s interest.
 - (C) compare caddis larvae to other cocoon-building insects.
 - (D) provide information about the life cycle of caddis larvae.
2. In line 4, “minute” most nearly means
 - (A) timely.
 - (B) timorous.
 - (C) tiny.
 - (D) tireless.
3. The author caused the larvae to decorate their cocoons with stripes by
 - (A) mixing several different materials together in the same jar.
 - (B) adding a new material to the jar during the cocoon-building process.
 - (C) changing their environment at various stages of cocoon development.
 - (D) changing the water in the jar frequently while they built their cocoons.
4. In line 8, the author describes the caddis larvae as “rather dull” because they
 - (A) were still in the caterpillar stage.
 - (B) were crowded together in one jar.
 - (C) had been living in a stagnant pool.
 - (D) were removed from the pool before they finished their cocoons.
5. In the final sentence (lines 33–36), the author suggests that the caddis larvae were
 - (A) energized by all of their hard work.
 - (B) annoyed by the author’s experiments.
 - (C) pleased by the attention they received.
 - (D) perplexed by the author’s interest in them.
6. What most probably led the author to experiment with caddis larvae?
 - (A) a passage in a book about pond life
 - (B) a conversation with the author’s friend
 - (C) a chance meeting with a famous naturalist
 - (D) the author’s pastime of collecting creatures from ponds and streams

Questions 7–12

1 Totem poles, the tallest wood carvings in the
2 world, are a trademark of the Northwest Coast
3 Indians. There are seven Indian nations up and
4 down the Northwest Coast, including Alaska,
5 and they each have their own style of carving.
6 Each pole is different, and each pole tells its
7 own story.

8 An elder taught the carver about ancestors,
9 crests, and symbols of the family before the
10 carver began to work. Design was left to the
11 carver. After splitting away the wood to give
12 form to the figures, the carver finished the final
13 details and shaping with curved knives. The
14 carver was also responsible for painting the
15 pole, although not all poles were painted. The
16 parts painted and the choice of colors depended

17 on the tradition of the area. In the 1800s, the
18 tallest poles were about sixty feet high, and
19 sometimes hundreds of people hauled on ropes
20 to raise a pole to its upright position.

21 The art of the totem pole carving almost
22 died out, with totem poles being felled, sold, or
23 even cut up for firewood. In the 1950s, the few
24 remaining carvers were hired by the University
25 of British Columbia Museum of Anthropology
26 to reproduce old and decaying Kwakiutl poles.
27 This project was largely responsible for bringing
28 the Northwest Coast Indian art back from the
29 brink of extinction.

7. Which best expresses the main idea of the passage?
- (A) Totem poles are making a comeback.
 - (B) Totem poles are no longer an artistic achievement.
 - (C) The art of totem pole carving almost died out.
 - (D) Northwest Coast Indians are famous for large, beautiful totem poles.
8. The author implies that totem pole carving was
- (A) abandoned for a long period.
 - (B) not a good way for a carver to make a living.
 - (C) not a respected occupation among the Indians.
 - (D) stopped because there were very few tall red cedars left.
9. Which best describes the organization of lines 8–17?
- (A) Different designs for totem poles are contrasted.
 - (B) A process is described in chronological order.
 - (C) An opinion is presented and then supported with facts.
 - (D) The history of totem poles is traced from past to present.
10. According to the passage, which is true of totem poles?
- (A) They are nonexistent today.
 - (B) They were once created only by the Kwakiutl.
 - (C) They varied predictably from carver to carver.
 - (D) They were carved by Northwest Coast Indian tribes.
11. The author of the passage appears to care most deeply about the fact that
- (A) each pole tells a different story.
 - (B) some poles took over a year to make.
 - (C) carvers painted some totem poles and not others.
 - (D) the artistic heritage of Northwest Coast Indians was saved.
12. According to the passage, a museum helped preserve the art of totem pole carving by
- (A) preserving totem poles so that they would not decay.
 - (B) commissioning carvers to duplicate existing totem poles.
 - (C) selling the museum's collection of Indian art to the public.
 - (D) encouraging carvers to create new and innovative designs.

Questions 13–18

The following passage was published in 1991.

1 The news media seem to be filled with
2 alarming editorials about how schools in the
3 United States may not be up to the challenge of
4 educating the workers needed in tomorrow's
5 world. In the world of tomorrow, according to
6 these self-styled pundits, laser technology,
7 robotics, and computer-controlled equipment
8 will be ubiquitous parts of our lives. Of
9 necessity, therefore, more students than ever
10 before will need advanced training or even
11 college degrees.

12 Some researchers, however, would argue
13 that these commentators overstate the case.
14 Two studies in particular have reached some
15 not-very-alarming conclusions about the
16 amount of education it will take to do the jobs
17 of the future. In the mid-1980s, a study by the
18 Hudson Institute concluded that, by the
19 beginning of the twenty-first century,
20 19 percent of newly created jobs could be
21 performed by high school dropouts and only
22 26 percent of newly created jobs would require
23 a college degree. (To put these projections into
24 perspective, approximately 17 percent of
25 today's high school students drop out—
26 although not necessarily permanently—while
27 some 26 percent go on to institutions of higher
28 education and obtain bachelor's degrees.

29 Slightly more than 50 percent of students get
30 their high school diploma and enter a program
31 of postsecondary education but drop out prior
32 to obtaining a bachelor's degree.) A more
33 recent study by the National Center on
34 Education and the Economy finds a more even
35 distribution, with 34 percent of new jobs
36 projected as requiring less than a high school
37 diploma, 36 percent requiring a high school
38 diploma and up to three years of college, and
39 30 percent requiring a college degree.

40 These studies, obviously, seem to portray a
41 future that is directly opposed to the visions
42 that more typically are found in the news
43 media. One possible explanation for the
44 discrepant conclusions coming from the two
45 camps lies in the possibility that the media have
46 confused rates of growth with actual numbers
47 of jobs. It is certainly the case that the
48 occupations that are projected to exhibit the
49 fastest growth over the next few decades are
50 frequently occupations that require advanced
51 educational degrees. However, what often goes
52 unstated and unrecognized is the reality that
53 such jobs are likely to represent no more than
54 5 percent of the jobs in the workforce as a
55 whole.

13. The primary purpose of the passage is to
- (A) suggest that reports expressing concern over the state of educational preparedness in the United States may be unnecessarily alarming.
 - (B) demonstrate ways in which the workers of tomorrow will need far more sophisticated knowledge in the area of technology if they are to be successful.
 - (C) illustrate several ways in which technology has altered the current job market and to describe the implications that such changes have for education in this country.
 - (D) lament the growing percentage of high school students in the United States who drop out prior to graduation and are therefore unable to secure high-paying careers.
14. In line 6, “pundits” most nearly means
- (A) educators.
 - (B) experts.
 - (C) naysayers.
 - (D) workers.
15. The author of the passage does all of the following EXCEPT
- (A) give data.
 - (B) describe research.
 - (C) compare trends in different countries.
 - (D) cite commentators from the news media.
16. Which conclusion can best be drawn from the two studies summarized in the second paragraph (lines 12–39)?
- (A) By the beginning of the twenty-first century, a college degree will be virtually required if one hopes for a high-paying job.
 - (B) The workforce being prepared by our schools today matches fairly closely the workforce likely to be needed by our society in the near future.
 - (C) Our students face an uncertain economic future unless educators and the public band together to reduce the rate at which high school students drop out.
 - (D) The majority of jobs at the beginning of the twenty-first century will require a knowledge of robotics, laser technology, or computer-assisted equipment.
17. The author’s tone when discussing the news media is best described as
- (A) admiring.
 - (B) critical.
 - (C) humorous.
 - (D) worried.
18. The purpose of the last paragraph (lines 40–55) is to
- (A) provide an explanation for the differing points of view.
 - (B) express concern for the future welfare of the economy.
 - (C) propose additional research needed to clarify the issues.
 - (D) criticize the shortcomings of the arguments made by both sides.

Questions 19–24

1 Any discussion about domestic life during
2 the medieval period in Europe must exclude an
3 important group: it cannot refer to most of the
4 population, who were poor. Writing about the
5 decline of the Middle Ages, a prominent
6 historian described a world of sharp contrasts,
7 where health, wealth, and good fortune were
8 enjoyed as much for their rarity as for their
9 advantages. “We, at the present day, can hardly
10 understand the keenness with which a warm
11 coat, a good fire on the hearth, a soft bed . . .
12 were formerly enjoyed.” He also made the
13 point that medieval popular art, which we
14 appreciate for its simple beauty, was prized by
15 its makers even more for its splendor and
16 pomp. Its overdecorated sumptuousness was
17 needed to make an impression on a public who
18 sought escape from the wretched conditions
19 under which they lived. The extravagant
20 pageants and religious festivals that
21 characterized that time can be understood not
22 only as celebrations, but also as antidotes to the
23 miseries of everyday life.

24 The poor were extremely badly housed,
25 were without water, and had few possessions.
26 Their dwellings were so small that family life
27 was compromised; these tiny hovels were little
28 more than shelters for sleeping. There was

29 room only for the infants—the older children
30 were separated from the parents and sent to
31 work as apprentices or servants. The result of
32 these deprivations was that concepts such as
33 “home” and “family” did not exist for these
34 souls.

35 By way of contrast, many town dwellers
36 partook of medieval prosperity. The free town,
37 which stood apart from the predominantly
38 feudal countryside, was uniquely European. Its
39 inhabitants—the *francs bourgeois* in France,
40 the *burghers* in Germany, the *borghese* in Italy,
41 and the burgesses in England—would create a
42 new urban civilization. The word “bourgeois”
43 first occurred in France in the early eleventh
44 century. It described the merchants and
45 tradespeople who lived in walled towns and
46 governed themselves through elected councils
47 and in most cases owed allegiance directly to
48 the king instead of a lord. What places the
49 bourgeois in the center of any discussion of
50 domestic comfort is that unlike the aristocrat,
51 who lived in a fortified castle, or the cleric,
52 who lived in a monastery, or the serf, who lived
53 in a hovel, the bourgeois lived in a house. Our
54 examination of the concept of the home begins
55 here.

19. The passage is primarily concerned with
- (A) praising the lives of the rich and the middle class during the Middle Ages.
 - (B) explaining the importance that medieval art had for the bourgeois and the rich.
 - (C) providing background information for a discussion of the medieval home and its comforts.
 - (D) describing the differences between political views in towns and in the country during the Middle Ages.
20. According to the passage, medieval pageants and festivals for the poor were appealing because they
- (A) were free.
 - (B) had religious importance.
 - (C) provided an excuse for celebration.
 - (D) provided relief from a hard, bleak existence.
21. The author suggests that we do not understand the “keenness” (line 10) of certain pleasures enjoyed by medieval people because we
- (A) seldom share our pleasures with others.
 - (B) lack sufficient knowledge of the period.
 - (C) lead lives that are too cluttered and busy.
 - (D) enjoy the pleasures mentioned fairly frequently.
22. In the second paragraph (lines 24–34), the author states that the concept of “family” did not exist because
- (A) families had to move fairly frequently.
 - (B) several families had to share one house.
 - (C) everyone had to work hard in order to survive.
 - (D) children were sent away as soon as they were old enough to work.
23. The author most likely uses similar terms from different languages (lines 38–42) in order to
- (A) inform the reader about the breadth of his research.
 - (B) emphasize the widespread nature of a similar concept.
 - (C) illustrate the subtle differences within a common idea.
 - (D) suggest the common origin of many medieval languages.
24. The passage suggests that loyalty to a king rather than to a lord had which advantage?
- (A) lower taxes
 - (B) less threat of death in battle
 - (C) more potential for self-government
 - (D) more mobility among social classes

Questions 25–30

In the passage below, architect Frank Lloyd Wright describes an incident from his youth that was to lead to a business partnership in later life.

1 September, long awaited, finally came.
2 Over the summer, I learned a lot on my uncle’s
3 farm. My fingers were quick, and I could work
4 almost as hard as a man. I wasn’t afraid of
5 anything—well, maybe a little afraid of storms
6 and of people. Buoyantly, I bounded up the
7 steps at home and flung my arms around
8 Mother. Turning to Jane and Maginel (my
9 sister and brother), I exclaimed, “How you’ve
10 grown.”

11 On the day I approached the forbidding
12 Second Ward School, I was less sure of myself.
13 Because I’d spent the summer on my uncle’s
14 farm, I had no companions with whom to share
15 my foray into the unknown.

16 On the playground a ruckus had erupted. In
17 the center of a circle of taunting boys was a pile
18 of leaves from which emerged the brawny
19 shoulders of a red-haired boy who spluttered
20 angrily. He was not at all intimidated.

21 “What happened?” I asked.

22 “Some boys decided to bury Robie Lamp in
23 leaves,” another boy explained.

24 I so admired Robie’s courage and
25 resourcefulness that we became friends of the
26 heart. Together we invented an ice boat, a
27 bobsled with double runners, and fantastic
28 kites. On a small printing press in the
29 basement, we set type. When a neighbor,
30 Charlie Doyon, wanted to join us, we assented
31 only after he agreed to inveigle two hundred
32 dollars from his father for purchasing a larger
33 press and more type. With the new press, we
34 set up a firm called Wright, Doyon, and Lamp,
35 Publishers and Printers. That was the beginning
36 of a relationship that continued into our
37 adulthood.

25. The primary purpose of the passage is to
- (A) show how much courage Wright had.
 - (B) show how Wright met his business partner.
 - (C) criticize those who are reluctant to help others.
 - (D) reveal that bullies will back down when challenged.
26. The mood of the first paragraph (lines 1–10) can best be described as one of
- (A) overbearing pride.
 - (B) adolescent shyness.
 - (C) youthful enthusiasm.
 - (D) sentimental yearning.
27. It can be inferred that Wright and Lamp required Charlie Doyon to give them money before joining their business because they
- (A) wanted to realize a profit before the actual business began.
 - (B) wanted to be sure that Charlie would not become a business rival.
 - (C) wanted to test Charlie’s commitment to joining the business.
 - (D) thought that the business would benefit from a larger model press.
28. The phrase “my foray into the unknown” (line 15) refers to Wright’s
- (A) entrance into a new school.
 - (B) first encounter with Robie Lamp.
 - (C) summer experiences on his uncle’s farm.
 - (D) unfamiliarity with the business world.
29. The sentence “I so admired Robie’s courage and resourcefulness that we became friends of the heart” (lines 24–26) is included in order to
- (A) explain why Wright did not torment Lamp.
 - (B) show that Lamp was lucky to win Wright’s friendship.
 - (C) explain why Wright and Lamp’s friendship was a lasting one.
 - (D) show that Wright was willing to overlook the fact that Lamp was older than Wright.
30. In line 31, “inveigle” most nearly means
- (A) acquire.
 - (B) dismiss.
 - (C) purchase.
 - (D) return.

ISEE[®]

Mathematics Achievement

UPPER LEVEL

Practice Test



Copyright © 2012 by Educational Records Bureau. All rights reserved. No part of this book may be reproduced, redistributed, or transmitted in any form or by any means, electronic, manual, photocopying, recording or by any information storage and retrieval system, without prior written permission of the Educational Records Bureau.

Section 4

Mathematics Achievement

42 Questions

Time: 36 minutes

Each question 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 spaces on your answer document that has the same number as the question. In this row, mark the space having the same letter as the answer you have chosen. You may write in your test booklet.

SAMPLE QUESTION:

Sample Answer

What is the area of a rectangle that has a length of 8 cm and a width of 6 cm?

(A) (B) (C) (D)

(A) 28 cm²

(B) 36 cm²

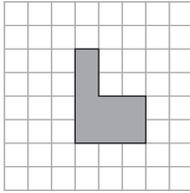
(C) 48 cm²

(D) 64 cm²

The correct answer is 48 cm², so circle C is darkened.



1. The area of each grid square shown is 5 cm^2 .



What is the area of the shaded region?

- (A) 40 cm^2
 (B) 50 cm^2
 (C) 60 cm^2
 (D) 70 cm^2
2. A jar contains 5 red balls, 6 blue balls, and 8 white balls. If one ball is chosen at random and then returned to the jar, and a second ball is chosen at random, what is the probability that both balls will be red?
- (A) $\frac{1}{5}$
 (B) $\frac{5}{19}$
 (C) $\frac{1}{5} \times \frac{1}{5}$
 (D) $\frac{5}{19} \times \frac{5}{19}$
3. What is the value of the numerical expression $3.2 \times 10^7 + 4.1 \times 10^5$?
- (A) 4.132×10^5
 (B) 3.61×10^6
 (C) 3.241×10^7
 (D) 7.3×10^{12}

4. Which value is NOT equal to $\frac{2}{3}$?

- (A) 0.6666667
 (B) $0.\overline{6}$
 (C) $\frac{1}{1.5}$
 (D) $\frac{2.4}{3.6}$

5. If $(8.05 + 1.95)t = t$, then what is the value of t ?

- (A) 10
 (B) 1
 (C) $\frac{1}{10}$
 (D) 0

6. For what value of x is the equation

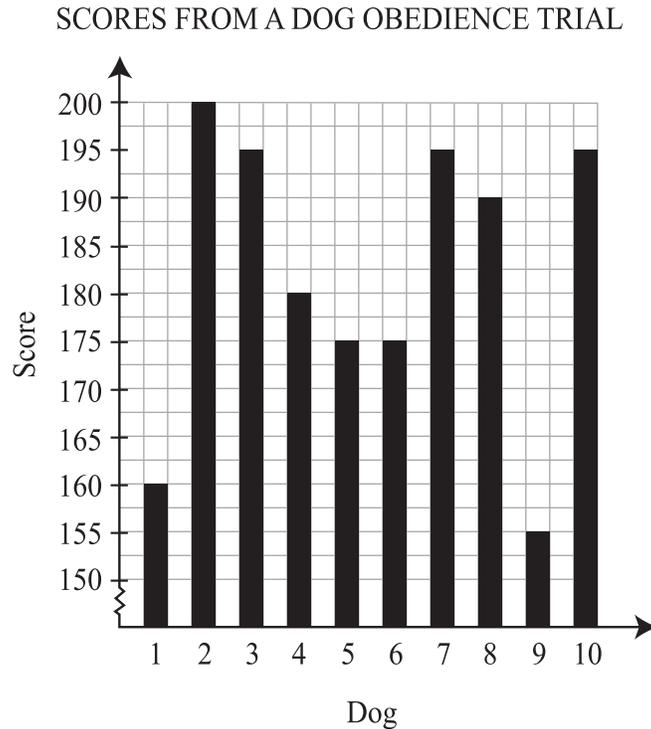
$$\frac{x+3}{3+x} = 0 \text{ true?}$$

- (A) -3
 (B) 0
 (C) all real numbers
 (D) There are no values for x that would make the equation true.

7. What is the value of the numerical expression $\sqrt{25+144}$?

- (A) 7
 (B) 13
 (C) 17
 (D) 60

8. The bar graph shown represents the scores of 10 different dogs at an obedience trial.



What is the median score?

- (A) 175
 - (B) 182
 - (C) 185
 - (D) 195
-
9. Two machines are used to make the same kind of electronic parts. Machine A makes 2 times the number of defective parts as Machine B. There was a total of 6 defective parts made yesterday by both machines. How many defective parts did Machine B make yesterday?
- (A) 2
 - (B) 4
 - (C) 6
 - (D) 12
10. Lisa has taken three tests so far in her Biology class. Her scores on these tests are 93, 89, and 95. The score on her final exam will be counted twice in her mean. What is the lowest score she can get on her final exam and have a mean score of no less than 93?
- (A) 93
 - (B) 94
 - (C) 95
 - (D) 96

11. Jane recorded the number of pets owned by each student in her class in the table shown.

PETS OWNED

Number of Pets	Numbers of Students Owning That Number of Pets
0	5
1	6
2	5
3	2
4	2

What is the mode of the data?

- (A) 1
 (B) 2
 (C) 5
 (D) 6

12. If n and m are prime numbers, what is the least common multiple of $8n$, $6nm$, and $4n^2$?

- (A) $6nm$
 (B) $6n^2m$
 (C) $24nm$
 (D) $24n^2m$

13. If $3x - 3 = xy - y$ and $x \neq 1$, what is the value of y ?

- (A) -3
 (B) -1
 (C) 1
 (D) 3

14. Which expression is equivalent to the expression $2x^2y^4 + 3x^4y^2 - (4x^4y^2 - 3x^2y^4)$?

- (A) $5x^2y^4$
 (B) $-2x^2y^4$
 (C) $5x^2y^4 - x^4y^2$
 (D) $-2x^2y^4 + 6x^4y^2$

15. For what value(s) of x does

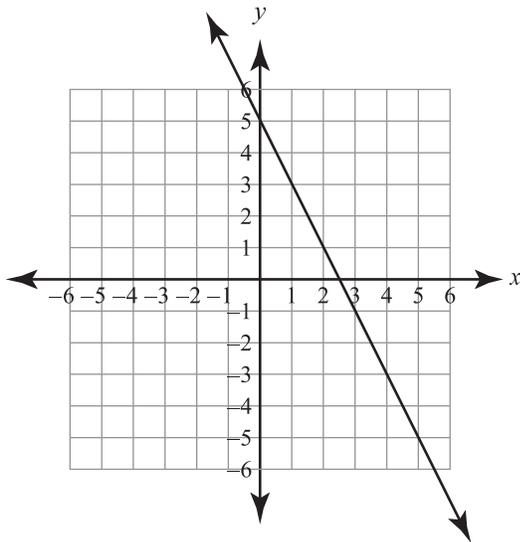
$$\frac{x^2 - 25}{(x + 2)(x - 3)} = 0?$$

- (A) $x = 5$ only
 (B) $x = -2$ and $x = 3$
 (C) $x = -5$ and $x = 5$
 (D) $x = -2$, $x = 3$, $x = -5$, and $x = 5$

16. Which expression is equivalent to the expression $(x - 2)(x + 3)$?

- (A) $x^2 - 6$
- (B) $x^2 + 1$
- (C) $x^2 - x - 6$
- (D) $x^2 + x - 6$

17. The graph of a line is shown.



What is the slope of the line?

- (A) -5
- (B) -2
- (C) 2
- (D) 5

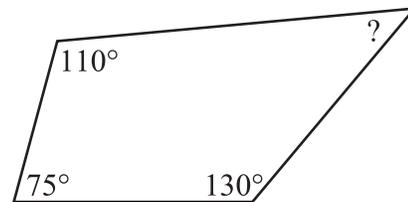
18. Point $(1, 8)$ is on a circle with center $(-2, 4)$. What is the radius of the circle?

- (A) 3 grid units
- (B) 4 grid units
- (C) 5 grid units
- (D) 6 grid units

19. Terri is planning a survey to try to determine the average number of hours students at her school spend watching TV. Which sample of students will give her the most reliable information about the students in her school?

- (A) her friends
- (B) a random sample of all the students in the school
- (C) all of the people that show up to watch a football game
- (D) a random sample of the students in the library before school

20. The measures of three of the angles of a quadrilateral are shown in the diagram.



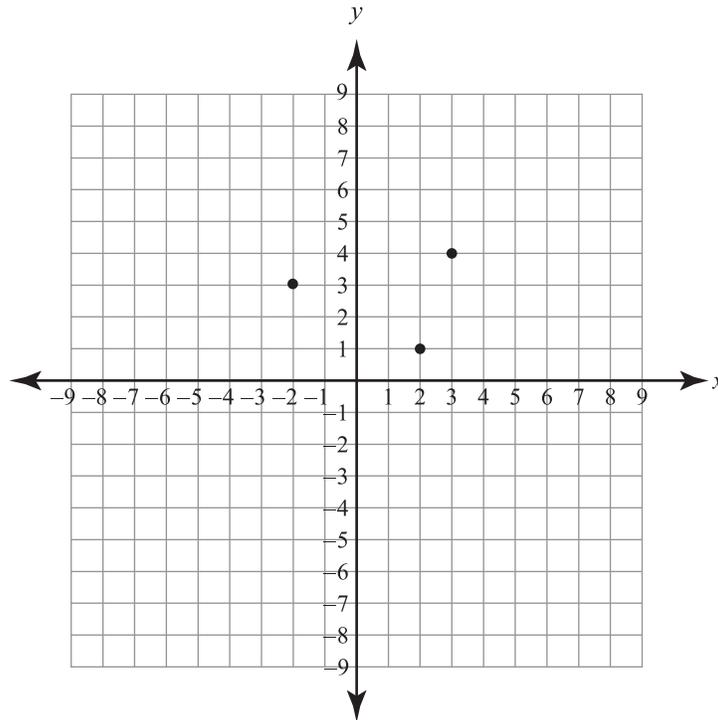
What is the measure of the fourth angle?

- (A) 45°
- (B) 50°
- (C) 70°
- (D) 75°

21. The 6-member debate team plans to send 3 of its members to a conference. How many combinations of 3 members are possible from the 6-member team?

- (A) 15
- (B) 20
- (C) 120
- (D) 216

22. The grid shows three vertices of a parallelogram.



Which could be the coordinates of the fourth vertex of the parallelogram?

- (A) $(-3, 5)$
- (B) $(-2, 0)$
- (C) $(0, 1)$
- (D) $(7, 2)$

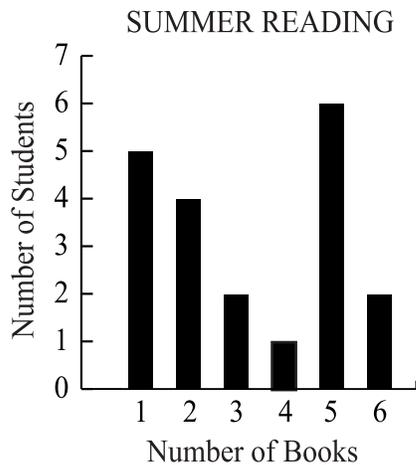
23. Which describes all values of x for which $|4x - 7| \geq 9$?

- (A) $x \geq 4$
- (B) $x \leq \frac{1}{2}$
- (C) $x \geq \frac{1}{2}$ or $x \leq -4$
- (D) $x \leq -\frac{1}{2}$ or $x \geq 4$

24. What type of number could NOT result from the difference of two irrational numbers?

- (A) integer
- (B) rational number
- (C) complex number
- (D) irrational number

25. The graph shows the number of books read by the students in Mrs. Schill’s class last summer. The numbers on the horizontal axis represent the number of books read during the summer, and the height of the bar represents the number of students who read this number of books.



What is the mean number of books read over the summer?

- (A) 3.00
 - (B) 3.25
 - (C) 3.50
 - (D) 4.00
26. A solution set is graphed on the number line shown.



The solution set of which inequality is shown?

- (A) $|x - 4| < 3$
- (B) $|x + 4| < 3$
- (C) $|x - 3| < 4$
- (D) $|x + 3| < 4$

27. A coin is tossed three times. The table shows the possible outcomes and the probability of each outcome.

COIN TOSS

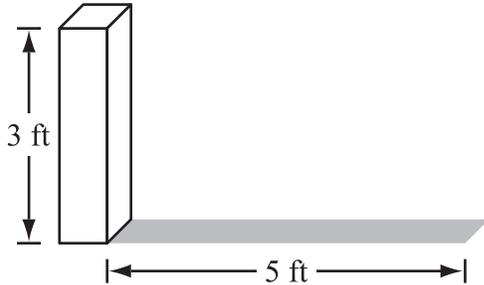
Number of Heads	Probability
3	$\frac{1}{8}$
2	$\frac{3}{8}$
1	$\frac{3}{8}$
0	$\frac{1}{8}$

What is the expected number of heads?

- (A) 1
 - (B) $\frac{3}{2}$
 - (C) 2
 - (D) $\frac{5}{2}$
28. There are 0.305 meters in one foot. There are 5,280 feet in 1 mile. A horse is traveling at a speed of 400 meters per minute. Which expression has a value equal to the horse’s speed, in miles per hour?

- (A) $\frac{400 \times 60}{0.305 \times 5,280}$
- (B) $\frac{400 \times 60 \times 0.305}{5,280}$
- (C) $\frac{60}{400 \times 0.305 \times 5,280}$
- (D) $\frac{400 \times 0.305 \times 5,280}{60}$

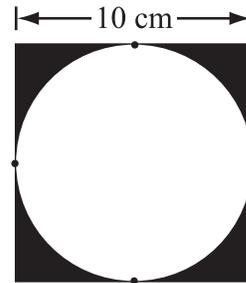
29. Allen measures the height of a pole to be 3 feet and the length of the shadow of the pole to be 5 feet, as shown in the diagram.



At the same time, the shadow of a tree is 20 feet in length. What is the height of the tree?

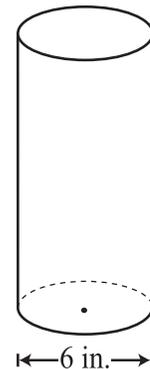
- (A) 8 feet
 (B) 12 feet
 (C) 15 feet
 (D) 18 feet
30. Which is the most reasonable unit to use when measuring the length of a leaf?
- (A) centimeters
 (B) grams
 (C) kilograms
 (D) meters
31. Which numerical expression does NOT represent an integer?
- (A) $\sqrt{4} - \sqrt{25}$
 (B) $\sqrt{4} \times \sqrt{25}$
 (C) $\sqrt{25 - 4}$
 (D) $\sqrt{4 \times 25}$

32. A circle is inscribed in a square with side length 10 cm, as shown.



What is the area of the shaded region?

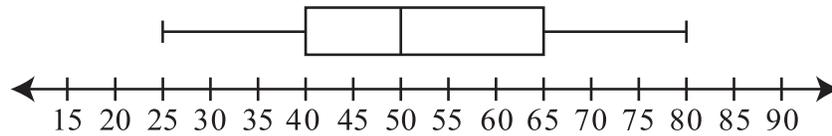
- (A) $(40 - 10\pi) \text{ cm}^2$
 (B) $(40 - 20\pi) \text{ cm}^2$
 (C) $(100 - 25\pi) \text{ cm}^2$
 (D) $(100 - 100\pi) \text{ cm}^2$
33. The height of the cylinder shown is 2 times its diameter. The formula used to find the volume of a cylinder is $V = r^2 h \pi$, where r is the radius of the cylinder and h is the height of the cylinder.



If the diameter of the cylinder is 6 in., what is its volume, in inches³?

- (A) 432π
 (B) 108π
 (C) 72π
 (D) 54π

34. The box-and-whisker plot below represents the high temperature, in degrees Fahrenheit, at a certain location on the same day in May for the last 50 years.



What is the range of the data?

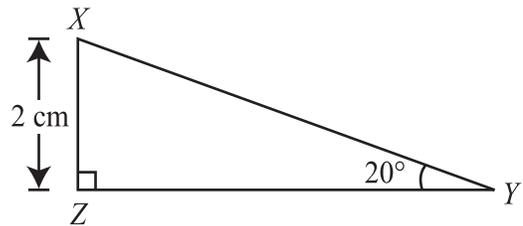
- (A) 80
 - (B) 55
 - (C) 50
 - (D) 25
-
35. A bag contains 4 green marbles, 5 blue marbles, 2 yellow marbles, and 4 orange marbles. Kate randomly removes 1 marble from the bag and keeps it. Joanne then randomly removes a marble from the bag. If the marble Kate removed from the bag was yellow, what is the probability that the marble Joanne removed was green?

- (A) $\frac{4}{14}$
- (B) $\frac{4}{15}$
- (C) $\frac{2}{15} \times \frac{4}{15}$
- (D) $\frac{2}{15} \times \frac{4}{14}$

36. Which expression is equivalent to the expression $\sqrt{16x^{16}}$?

- (A) $4x^4$
- (B) $4x^8$
- (C) $8x^4$
- (D) $8x^8$

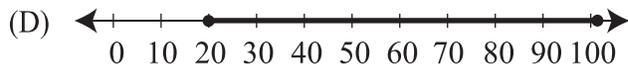
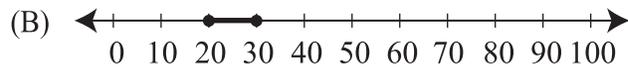
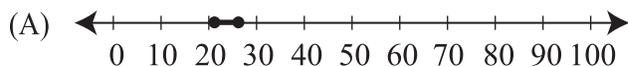
37. Triangle XYZ is shown. The length of \overline{XZ} is 2 cm. The measure of angle XYZ is 20° .



The value of which expression is equal to the length of side \overline{XY} ?

- (A) $\frac{2}{\sin 20^\circ}$
- (B) $\frac{\sin 20^\circ}{2}$
- (C) $\frac{2}{\tan 20^\circ}$
- (D) $\frac{\tan 20^\circ}{2}$

38. Which graph represents the solution set of the inequality $41 \leq 2x - 1 \leq 51$?



39. The stem-and-leaf-plot shown represents the scores on a math test.

TEST SCORES

Stem	Leaf
5	5 7 8
6	2 2 2 4 6 7 8
7	4 6 6 6 7 8 8 9 9
8	3 3 3 4 4 5
9	1 2 2 3 7 8 9
10	0

What is the median score on the test?

- (A) 70
 (B) 75
 (C) 78
 (D) 80

40. What is the solution set for $x^2 + 49 = 0$?

- (A) 7
 (B) $7i$
 (C) ± 7
 (D) $\pm 7i$

41. What is the result of the expression

$$\begin{bmatrix} 2 & 3 \\ 0 & 4 \end{bmatrix} + \begin{bmatrix} 5 & 3 \\ 2 & 1 \end{bmatrix}?$$

(A) $\begin{bmatrix} 7 & 6 \\ 2 & 5 \end{bmatrix}$

(B) $\begin{bmatrix} 7 & 6 \\ 0 & 4 \end{bmatrix}$

(C) $\begin{bmatrix} 7 & 3 \\ 2 & 4 \end{bmatrix}$

(D) $\begin{bmatrix} 7 & 3 \\ 0 & 5 \end{bmatrix}$

42. The formula for the surface area of a sphere is $SA = 4\pi r^2$, where r is the radius of the sphere. A sphere has a surface area of $16\pi \text{ cm}^2$. What is the radius of this sphere?

- (A) 2 cm
 (B) 4 cm
 (C) 8 cm
 (D) 16 cm



ISEE[®]

Essay

UPPER LEVEL

Practice Test



Copyright © 2012 by Educational Records Bureau. All rights reserved. No part of this book may be reproduced, redistributed, or transmitted in any form or by any means, electronic, manual, photocopying, recording or by any information storage and retrieval system, without prior written permission of the Educational Records Bureau.

Essay Topic Sheet

The directions for the Essay portion of the ISEE are printed in the box below. Use the pre-lined pages in Appendix B (pages 141–142) for this part of the Practice Test.

Note: The page references in the directions below refer to the page numbers at the bottom of the answer sheet, not to the page numbers of the *What to Expect on the ISEE* book.

You will have 30 minutes to plan and write an essay on the topic printed on the other side of this page. **Do not write on another topic. An essay on another topic is not acceptable.**

The essay is designed to give you an opportunity to show how well you can write. You should try to express your thoughts clearly. How well you write is much more important than how much you write, but you need to say enough for a reader to understand what you mean.

You will probably want to write more than a short paragraph. You should also be aware that a copy of your essay will be sent to each school that will be receiving your test results. You are to write only in the appropriate section of the answer sheet. Please write or print so that your writing may be read by someone who is not familiar with your handwriting.

You may make notes and plan your essay on the reverse side of the page. Allow enough time to copy the final form onto your answer sheet. You must copy the essay topic onto your answer sheet, on page 3, in the box provided.

Please remember to write only the final draft of the essay on pages 3 and 4 of your answer sheet and to write it in blue or black pen. Again, you may use cursive writing or you may print. Only pages 3 and 4 will be sent to the schools.

Directions continue on the next page.

