SAT Prep Test 2—Math

Module 2—Easier

Turn to Section 2 of your answer sheet (p. 664) to answer the questions in this section.

DIRECTIONS

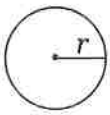
The questions in this section address a number of important math skills.
Use of a calculator is permitted for all questions.

NOTES

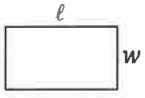
Unless otherwise indicated:

- All variables and expressions represent real numbers.
- Figures provided are drawn to scale.
- All figures lie in a plane.
- The domain of a given function f is the set of all real numbers x for which $f(x)$ is a real number.

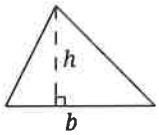
REFERENCE



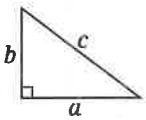
$A = \pi r^2$
$C = 2\pi r$



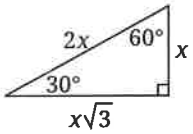
$A = \ell w$

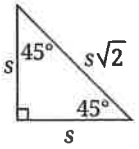


$A = \frac{1}{2}bh$

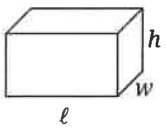


$c^2 = a^2 + b^2$

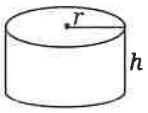




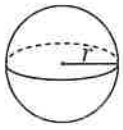
Special Right Triangles



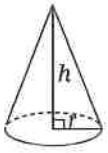
$V = \ell wh$



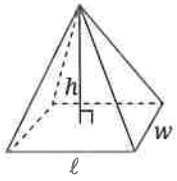
$V = \pi r^2 h$



$V = \frac{4}{3}\pi r^3$



$V = \frac{1}{3}\pi r^2 h$



$V = \frac{1}{3}\ell wh$

The number of degrees of arc in a circle is 360.
The number of radians of arc in a circle is 2π.
The sum of the measures in degrees of the angles of a triangle is 180.

CONTINUE

For multiple-choice questions, solve each problem, choose the correct answer from the choices provided, and then circle your answer in this book. Circle only one answer for each question. If you change your mind, completely erase the circle. You will not get credit for questions with more than one answer circled or for questions with no answers circled.

For student-produced response questions, solve each problem and write your answer next to or under the question in the test book as described below.

- Once you've written your answer, circle it clearly. You will not receive credit for anything written outside the circle or for any questions with more than one circled answer.
- If you find **more than one correct answer**, write and circle only one answer.
- Your answer can be up to 5 characters for a **positive** answer and up to 6 characters (including the negative sign) for a **negative** answer, but no more.
- If your answer is a **fraction** that is too long (over 5 characters for positive, 6 characters for negative), write the decimal equivalent.
- If your answer is a **decimal** that is too long (over 5 characters for positive, 6 characters for negative), truncate it or round at the fourth digit.
- If your answer is a **mixed number** (such as $3\frac{1}{2}$), write it as an improper fraction (7/2) or its decimal equivalent (3.5).
- Don't enter **symbols** such as a percent sign, comma, or dollar sign in your circled answer.

CONTINUE

1 Mark for Review

33, 34, 38, 41, 43, 44, 47

Which of the following is the median of the given data?

(A) 38

(B) 40

(C) 41

(D) 42

2 Mark for Review

What is the value of the solution to the equation $22 = y - 10$?

3 Mark for Review

A rectangle has a height of 23 inches (in) and a width of 9 in. What is its perimeter, in inches?

(A) 32

(B) 64

(C) 207

(D) 1,024

4 Mark for Review

$15a - (6a - 2a)$

Which of the following expressions is equivalent to the given expression?

(A) $5a$

(B) $7a$

(C) $11a$

(D) $23a$

5 Mark for Review

Which equation represents the relationship between the numbers a and b if a is half of b?

(A) $a = \frac{1}{2}b$

(B) $a = b - 2$

(C) $a = b + 2$

(D) $b = \frac{1}{2}a$

CONTINUE

6 Mark for Review

For all positive values of y, the expression $\frac{3}{y+c}$ is equivalent to $\frac{15}{5y+30}$. What is the value of constant c?

(A) 3

(B) 6

(C) 8

(D) 150

7 Mark for Review

A total of 200 pets were adopted at an event. If 70% of the adopted pets were dogs, how many of the pets were dogs?

8 Mark for Review

James must drive 100 miles before he can take his driver's license test. He knows that when he drives around town running errands, he drives at an average speed of 20 miles per hour. If James maintains this average speed, how many hours must he drive to meet the requirement for his driver's license test?

(A) 5

(B) 20

(C) 80

(D) 100

9 Mark for Review

What is the value of $4y - 16$ if $y - 4 = 11$?

CONTINUE

10 Mark for Review

The function g is defined as $g(x) = x^2 - 1$. What is the value of $g(x)$ when $x = 3$?

(A) 4

(B) 5

(C) 7

(D) 8

11 Mark for Review

The production cost $p(x)$, in dollars, to produce x units of an item when materials cost \$2 per item is given by $p(x) = 2x + 150$. What is the total cost to produce 2,000 units of this item?

(A) \$1,850

(B) \$2,300

(C) \$3,850

(D) \$4,150

12 Mark for Review

The function f is given as $f(x) = \frac{2}{3}x$. When $x = 6$, what is the value of $f(x)$?

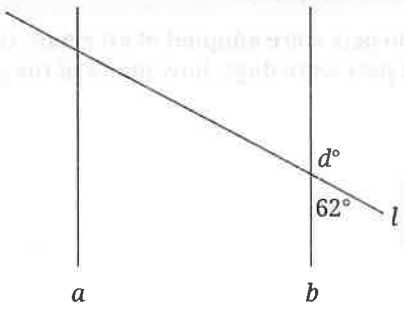
(A) 2

(B) 4

(C) 6

(D) 9

13 Mark for Review



Note: Figure not drawn to scale.

In the given figure, what is the value of d if line a is parallel to line b?

CONTINUE

14 Mark for Review

$$3x - 4y = 17$$

In the xy-plane, the graph of a line with an x-intercept of $(c, 0)$ and a y-intercept of $(0, k)$, where c and k are constants, can be represented by the given equation. What is the value of $\frac{c}{k}$?

(A) $-\frac{4}{3}$

(B) $-\frac{3}{4}$

(C) $\frac{3}{4}$

(D) $\frac{4}{3}$

15 Mark for Review

A postal machine processes mail at a constant rate of 21 pieces of mail per minute. At this rate, how many pieces of mail would the machine process in 7 minutes?

(A) 3

(B) 14

(C) 28

(D) 147

16 Mark for Review

Stella had 211 invitations to send for an event. She has already sent 43 invitations and will send them all if she sends 24 each day for the next d days. Which of the following equations represents this situation?

(A) $24d - 43 = 211$

(B) $24d + 43 = 211$

(C) $43d - 24 = 211$

(D) $43d + 24 = 211$

17 Mark for Review

x	-1	0	1	2
$f(x)$	12	15	18	21

When the linear function $y = f(x)$ is graphed in the xy-plane, the graph contains the corresponding values of x and $f(x)$ shown in the table above. Which of the following could represent the function?

(A) $f(x) = 3x + 12$

(B) $f(x) = 3x + 15$

(C) $f(x) = 15x + 12$

(D) $f(x) = 15x + 15$

CONTINUE

18 Mark for Review

The height of a rocket launched from a rooftop can be modeled by the equation $h = -16s^2 + 64s + 21$, where h is the height of the rocket above the ground, in feet, and s is the number of seconds since the rocket was launched. Which of the following represents the height, in feet, of the rooftop from which the rocket was launched?

(A) 0

(B) 16

(C) 21

(D) 64

19 Mark for Review

Function f is defined by $f(x) = x^3 + 1$. Which of the following tables gives three values of x and their corresponding values of y?

(A)

x	2	3	4
y	3	4	5

(B)

x	2	3	4
y	3	28	64

(C)

x	2	3	4
y	9	10	65

(D)

x	2	3	4
y	9	28	65

20 Mark for Review

If $h(-1) = 3$ and $h(0) = 5$ in linear function h, which of the following is the equation of function h?

(A) $h(x) = 2x + 5$

(B) $h(x) = 2x + 3$

(C) $h(x) = 2x$

(D) $h(x) = 3x + 5$

CONTINUE

21 Mark for Review

Which of the following equations correctly expresses r in terms of p and s if the relationship between the numbers p, r, and s can be expressed as $p = 13r - 6s$?

(A) $r = \frac{-6s - p}{13}$

(B) $r = 13p + 6s$

(C) $r = \frac{1}{13}p + 6s$

(D) $r = \frac{p + 6s}{13}$

22 Mark for Review

Right triangle ABC has sides of the following lengths: $AB = 165$, $BC = 280$, and $AC = 325$. Another triangle, LMN, is similar to ABC such that A corresponds to L and B corresponds to M. What is the value of $\cos(L)$?

(A) $\frac{33}{65}$

(B) $\frac{33}{56}$

(C) $\frac{56}{65}$

(D) $\frac{65}{33}$

STOP

If you finish before time is called, you may check your work on this module only.
Do not turn to any other module in the test.