



The SAT[®]

Practice Test #2

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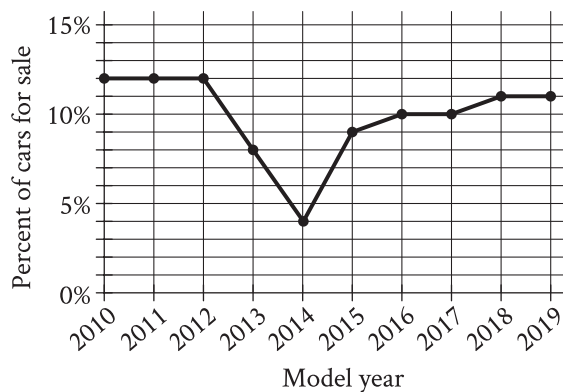
It is one of the best ways to get ready for the SAT.

After you have taken the practice test, score it right away at sat.org/scoring.

This version of the SAT Practice Test is for students who will be taking the digital SAT in nondigital format.

1

The line graph shows the percent of cars for sale at a used car lot on a given day by model year.



For what model year is the percent of cars for sale the smallest?

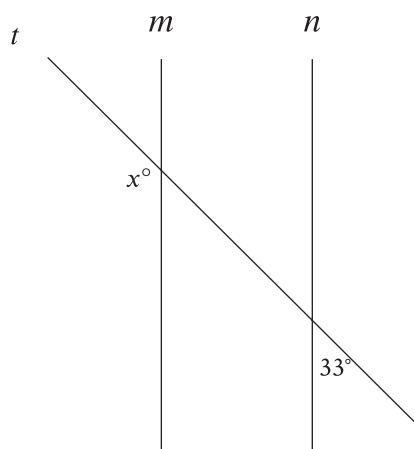
- A) 2012
- B) 2013
- C) 2014
- D) 2015

2

For a particular machine that produces beads, 29 out of every 100 beads it produces have a defect. A bead produced by the machine will be selected at random. What is the probability of selecting a bead that has a defect?

- A) $\frac{1}{2,900}$
- B) $\frac{1}{29}$
- C) $\frac{29}{100}$
- D) $\frac{29}{10}$

3

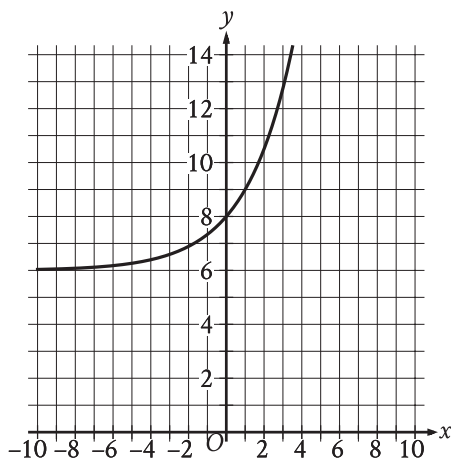


Note: Figure not drawn to scale.

In the figure, line m is parallel to line n , and line t intersects both lines. What is the value of x ?

- A) 33
- B) 57
- C) 123
- D) 147

4



What is the y -intercept of the graph shown?

- A) $(-8, 0)$
- B) $(-6, 0)$
- C) $(0, 6)$
- D) $(0, 8)$

5

The total cost $f(x)$, in dollars, to lease a car for 36 months from a particular car dealership is given by $f(x) = 36x + 1,000$, where x is the monthly payment, in dollars. What is the total cost to lease a car when the monthly payment is \$400?

- A) \$13,400
- B) \$13,000
- C) \$15,400
- D) \$37,400

6

Each side of a square has a length of 45. What is the perimeter of this square?

7

$$\frac{55}{x + 6} = x$$

What is the positive solution to the given equation?

8

An object travels at a constant speed of 12 centimeters per second. At this speed, what is the time, in seconds, that it would take for the object to travel 108 centimeters?

- A) 9
- B) 96
- C) 120
- D) 972

9

Data set X: 5, 9, 9, 13
Data set Y: 5, 9, 9, 13, 27

The lists give the values in data sets X and Y. Which statement correctly compares the mean of data set X and the mean of data set Y?

- A) The mean of data set X is greater than the mean of data set Y.
- B) The mean of data set X is less than the mean of data set Y.
- C) The means of data set X and data set Y are equal.
- D) There is not enough information to compare the means.

10

A rocket contained 467,000 kilograms (kg) of propellant before launch. Exactly 21 seconds after launch, 362,105 kg of this propellant remained. On average, approximately how much propellant, in kg, did the rocket burn each second after launch?

- A) 4,995
- B) 17,243
- C) 39,481
- D) 104,895

11

If $4x + 2 = 12$, what is the value of $16x + 8$?

- A) 40
- B) 48
- C) 56
- D) 60

12

An object is kicked from a platform. The equation $h = -4.9t^2 + 7t + 9$ represents this situation, where h is the height of the object above the ground, in meters, t seconds after it is kicked. Which number represents the height, in meters, from which the object was kicked?

- A) 0
- B) 4.9
- C) 7
- D) 9

13

$$f(x) = 4x^2 - 50x + 126$$

The given equation defines the function f . For what value of x does $f(x)$ reach its minimum?

14

A small business owner budgets \$2,200 to purchase candles. The owner must purchase a minimum of 200 candles to maintain the discounted pricing. If the owner pays \$4.90 per candle to purchase small candles and \$11.60 per candle to purchase large candles, what is the maximum number of large candles the owner can purchase to stay within the budget and maintain the discounted pricing?

15

In the linear function f , $f(0) = 8$ and $f(1) = 12$. Which equation defines f ?

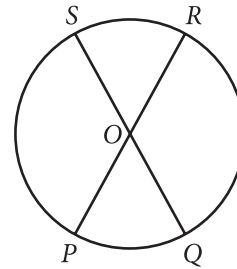
- A) $f(x) = 12x + 8$
- B) $f(x) = 4x$
- C) $f(x) = 4x + 12$
- D) $f(x) = 4x + 8$

16

The function $f(w) = 6w^2$ gives the area of a rectangle, in square feet (ft^2), if its width is w ft and its length is 6 times its width. Which of the following is the best interpretation of $f(14) = 1,176$?

- A) If the width of the rectangle is 14 ft, then the area of the rectangle is $1,176 \text{ ft}^2$.
- B) If the width of the rectangle is 14 ft, then the length of the rectangle is 1,176 ft.
- C) If the width of the rectangle is 1,176 ft, then the length of the rectangle is 14 ft.
- D) If the width of the rectangle is 1,176 ft, then the area of the rectangle is 14 ft^2 .

17



Note: Figure not drawn to scale.

The circle shown has center O , circumference 144π , and diameters $\overline{PR}$ and $\overline{QS}$. The length of arc PS is twice the length of arc PQ . What is the length of arc QR ?

- A) 24π
- B) 48π
- C) 72π
- D) 96π

18

A company that provides whale-watching tours takes groups of 21 people at a time. The company's revenue is 80 dollars per adult and 60 dollars per child. If the company's revenue for one group consisting of adults and children was 1,440 dollars, how many people in the group were children?

- A) 3
- B) 9
- C) 12
- D) 18

19

The function h is defined by $h(x) = 4x + 28$. The graph of $y = h(x)$ in the xy -plane has an x -intercept at $(a, 0)$ and a y -intercept at $(0, b)$, where a and b are constants. What is the value of $a + b$?

- A) 21
- B) 28
- C) 32
- D) 35

20

One of the factors of $2x^3 + 42x^2 + 208x$ is $x + b$, where b is a positive constant. What is the smallest possible value of b ?

21

$$y = -1.5$$

$$y = x^2 + 8x + a$$

In the given system of equations, a is a positive constant. The system has exactly one distinct real solution. What is the value of a ?

22

$$f(x) = (x + 6)(x + 5)(x - 4)$$

The function f is given. Which table of values represents $y = f(x) - 3$?

A)

x	y
-6	-9
-5	-8
4	1

B)

x	y
-6	-3
-5	-3
4	-3

C)

x	y
-6	-3
-5	-2
4	7

D)

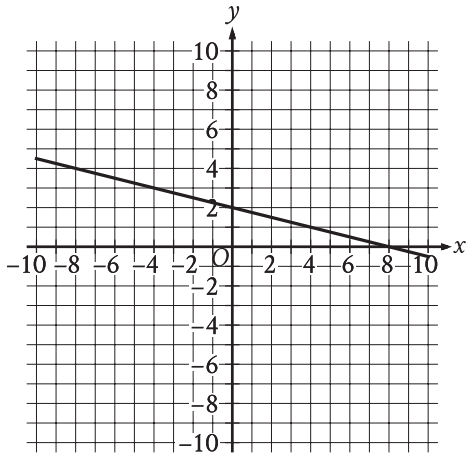
x	y
-6	3
-5	3
4	3

23

For the function q , the value of $q(x)$ decreases by 45% for every increase in the value of x by 1. If $q(0) = 14$, which equation defines q ?

- A) $q(x) = 0.55(14)^x$
- B) $q(x) = 1.45(14)^x$
- C) $q(x) = 14(0.55)^x$
- D) $q(x) = 14(1.45)^x$

24



The graph of $y = f(x) + 14$ is shown. Which equation defines function f ?

- A) $f(x) = -\frac{1}{4}x - 12$
- B) $f(x) = -\frac{1}{4}x + 16$
- C) $f(x) = -\frac{1}{4}x + 2$
- D) $f(x) = -\frac{1}{4}x - 14$

25

$$RS = 20$$

$$ST = 48$$

$$TR = 52$$

The side lengths of right triangle RST are given. Triangle RST is similar to triangle UVW , where S corresponds to V and T corresponds to W . What is the value of $\tan W$?

- A) $\frac{5}{13}$
- B) $\frac{5}{12}$
- C) $\frac{12}{13}$
- D) $\frac{12}{5}$

26

One gallon of paint will cover 220 square feet of a surface. A room has a total wall area of w square feet. Which equation represents the total amount of paint P , in gallons, needed to paint the walls of the room twice?

- A) $P = \frac{w}{110}$
- B) $P = 440w$
- C) $P = \frac{w}{220}$
- D) $P = 220w$

27

The number a is 110% greater than the number b . The number b is 90% less than 47. What is the value of a ?

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.**

1

There are 55 students in Spanish club. A sample of the Spanish club students was selected at random and asked whether they intend to enroll in a new study program. Of those surveyed, 20% responded that they intend to enroll in the study program. Based on this survey, which of the following is the best estimate of the total number of Spanish club students who intend to enroll in the study program?

- A) 11
- B) 20
- C) 44
- D) 55

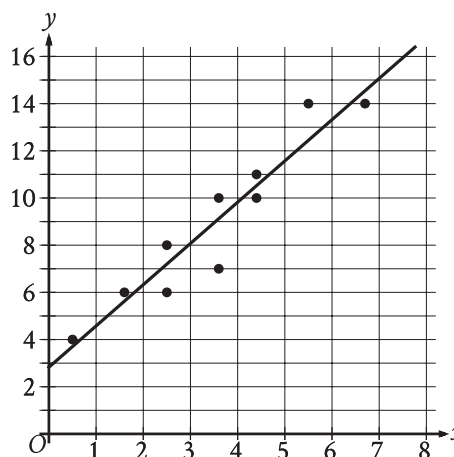
2

Jay walks at a speed of 3 miles per hour and runs at a speed of 5 miles per hour. He walks for w hours and runs for r hours for a combined total of 14 miles. Which equation represents this situation?

- A) $3w + 5r = 14$
- B) $\frac{1}{3}w + \frac{1}{5}r = 14$
- C) $\frac{1}{3}w + \frac{1}{5}r = 112$
- D) $3w + 5r = 112$

3

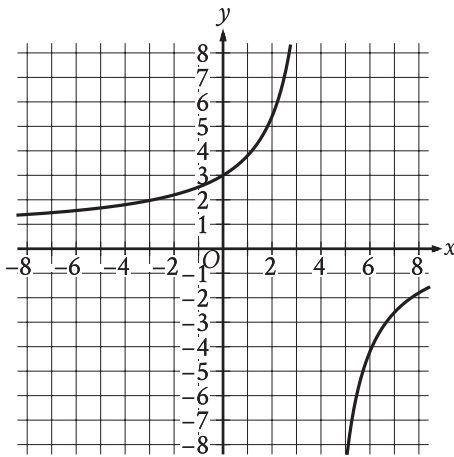
The scatterplot shows the relationship between two variables, x and y . A line of best fit is also shown.



Which of the following equations best represents the line of best fit shown?

- A) $y = 2.8 + 1.7x$
- B) $y = 2.8 - 1.7x$
- C) $y = -2.8 + 1.7x$
- D) $y = -2.8 - 1.7x$

4



The graph of $y = f(x)$ is shown in the xy -plane. What is the value of $f(0)$?

- A) -3
- B) 0
- C) $\frac{3}{5}$
- D) 3

5

Which expression is equivalent to $(m^4q^4z^{-1})(mq^5z^3)$, where m , q , and z are positive?

- A) $m^4q^{20}z^{-3}$
- B) $m^5q^9z^2$
- C) $m^6q^8z^{-1}$
- D) $m^{20}q^{12}z^{-2}$

6

73, 74, 75, 77, 79, 82, 84, 85, 91

What is the median of the data shown?

7

$$x + 40 = 95$$

What value of x is the solution to the given equation?

8

$$\begin{aligned} 5x &= 15 \\ -4x + y &= -2 \end{aligned}$$

The solution to the given system of equations is (x, y) . What is the value of $x + y$?

- A) -17
- B) -13
- C) 13
- D) 17

9

$$g(m) = -0.05m + 12.1$$

The given function g models the number of gallons of gasoline that remains from a full gas tank in a car after driving m miles. According to the model, about how many gallons of gasoline are used to drive each mile?

- A) 0.05
- B) 12.1
- C) 20
- D) 242.0

10

$$\frac{1}{7b} = \frac{11x}{y}$$

The given equation relates the positive numbers b , x , and y . Which equation correctly expresses x in terms of b and y ?

- A) $x = \frac{7by}{11}$
- B) $x = y - 77b$
- C) $x = \frac{y}{77b}$
- D) $x = 77by$

11

$$y = 76$$

$$y = x^2 - 5$$

The graphs of the given equations in the xy -plane intersect at the point (x, y) . What is a possible value of x ?

- A) $-\frac{76}{5}$
- B) -9
- C) 5
- D) 76

12

$$y > 14$$

$$4x + y < 18$$

The point $(x, 53)$ is a solution to the system of inequalities in the xy -plane. Which of the following could be the value of x ?

- A) -9
- B) -5
- C) 5
- D) 9

13

Out of 300 seeds that were planted, 80% sprouted. How many of these seeds sprouted?

14

The function f is defined by $f(x) = 4x$. For what value of x does $f(x) = 8$?

15

Which expression is equivalent to

$$\frac{8x(x-7) - 3(x-7)}{2x-14}, \text{ where } x > 7?$$

A) $\frac{x-7}{5}$

B) $\frac{8x-3}{2}$

C) $\frac{8x^2 - 3x - 14}{2x - 14}$

D) $\frac{8x^2 - 3x - 77}{2x - 14}$

16

Line p is defined by $2y + 18x = 9$. Line r is perpendicular to line p in the xy -plane. What is the slope of line r ?

A) -9

B) $-\frac{1}{9}$

C) $\frac{1}{9}$

D) 9

17

$$f(t) = 8,000(0.65)^t$$

The given function f models the number of coupons a company sent to their customers at the end of each year, where t represents the number of years since the end of 1998, and $0 \leq t \leq 5$. If $y = f(t)$ is graphed in the ty -plane, which of the following is the best interpretation of the y -intercept of the graph in this context?

A) The minimum estimated number of coupons the company sent to their customers during the 5 years was 1,428.

B) The minimum estimated number of coupons the company sent to their customers during the 5 years was 8,000.

C) The estimated number of coupons the company sent to their customers at the end of 1998 was 1,428.

D) The estimated number of coupons the company sent to their customers at the end of 1998 was 8,000.

18

Triangle XYZ is similar to triangle RST such that X , Y , and Z correspond to R , S , and T , respectively. The measure of $\angle Z$ is 20° and $2XY = RS$. What is the measure of $\angle T$?

- A) 2°
- B) 10°
- C) 20°
- D) 40°

19

$$y = 6x + 18$$

One of the equations in a system of two linear equations is given. The system has no solution. Which equation could be the second equation in the system?

- A) $-6x + y = 18$
- B) $-6x + y = 22$
- C) $-12x + y = 36$
- D) $-12x + y = 18$

20

What is the area, in square centimeters, of a rectangle with a length of 34 centimeters (cm) and a width of 29 cm?

21

$$\begin{aligned}y &= 4x + 1 \\ 4y &= 15x - 8\end{aligned}$$

The solution to the given system of equations is (x, y) . What is the value of $x - y$?

22

$$5x^2 + 10x + 16 = 0$$

How many distinct real solutions does the given equation have?

- A) Exactly one
- B) Exactly two
- C) Infinitely many
- D) Zero

23

A certain park has an area of 11,863,808 square yards. What is the area, in square miles, of this park? (1 mile = 1,760 yards)

- A) 1.96
- B) 3.83
- C) 3,444.39
- D) 6,740.8

24

Which of the following equations represents a circle in the xy -plane that intersects the y -axis at exactly one point?

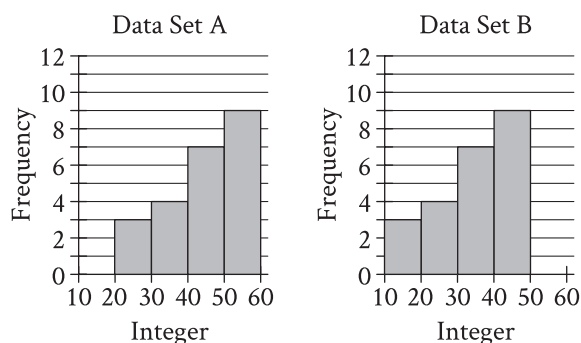
- A) $(x - 8)^2 + (y - 8)^2 = 16$
- B) $(x - 8)^2 + (y - 4)^2 = 16$
- C) $(x - 4)^2 + (y - 9)^2 = 16$
- D) $x^2 + (y - 9)^2 = 16$

25

In triangles ABC and DEF , angles B and E each have measure 27° and angles C and F each have measure 41° . Which additional piece of information is sufficient to determine whether triangle ABC is congruent to triangle DEF ?

- A) The measure of angle A
- B) The length of side AB
- C) The lengths of sides BC and EF
- D) No additional information is necessary.

26



Two data sets of 23 integers each are summarized in the histograms shown. For each of the histograms, the first interval represents the frequency of integers greater than or equal to 10, but less than 20. The second interval represents the frequency of integers greater than or equal to 20, but less than 30, and so on. What is the smallest possible difference between the mean of data set A and the mean of data set B?

- A) 0
- B) 1
- C) 10
- D) 23

27

A right triangle has legs with lengths of 24 centimeters and 21 centimeters. If the length of this triangle's hypotenuse, in centimeters, can be written in the form $3\sqrt{d}$, where d is an integer, what is the value of d ?

STOP

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