

Question ID 002dba45

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 002dba45

Line k is defined by $y = -\frac{17}{3}x + 5$. Line j is perpendicular to line k in the xy -plane. What is the slope of line j ?

Question ID f224df07

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	<div><div></div><div></div><div></div></div>

ID: f224df07

A cargo helicopter delivers only 100-pound packages and 120-pound packages. For each delivery trip, the helicopter must carry at least 10 packages, and the total weight of the packages can be at most 1,100 pounds. What is the maximum number of 120-pound packages that the helicopter can carry per trip?

- A. 2
- B. 4
- C. 5
- D. 6

Question ID cb8f449f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: cb8f449f

$\frac{1}{2}y=4$
$x-\frac{1}{2}y=2$

The system of equations above has solution (x, y). What is the value of x ?

- A. 3
- B. $\frac{7}{2}$
- C. 4
- D. 6

Question ID e62cfe5f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: e62cfe5f

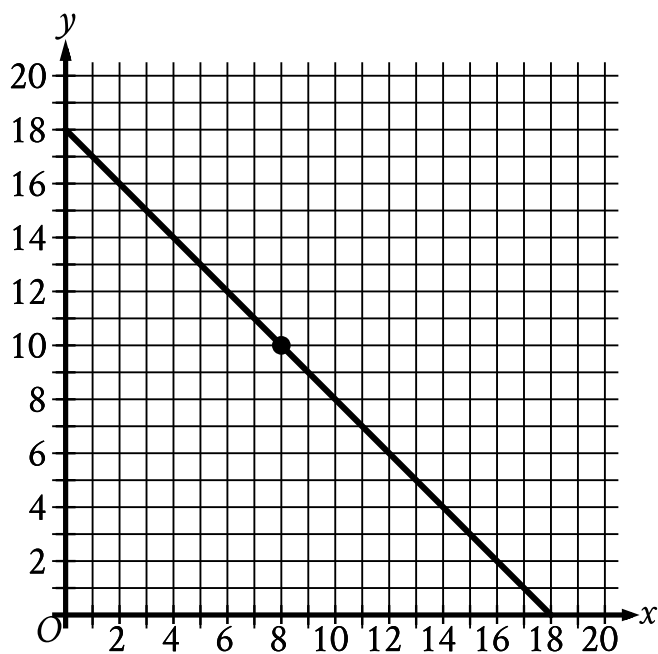
According to a model, the head width, in millimeters, of a worker bumblebee can be estimated by adding 0.6 to four times the body weight of the bee, in grams.

According to the model, what would be the head width, in millimeters, of a worker bumblebee that has a body weight of 0.5 grams?

Question ID 9b0a4eae

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 9b0a4eae



- The graph in the xy -plane models the possible combinations of length x , in meters (**m**), and width y , in meters, for a rectangle with a perimeter of **36 m**. Which statement is the best interpretation of the point $(8, 10)$ in this context?
- A. The length is **10 m** less than the perimeter, and the width is **8 m** less than the perimeter.
 - B. The length is **10 m**, and the width is **8 m**.
 - C. The length is **8 m**, and the width is **10 m**.
 - D. The length is **8 m** less than the perimeter, and the width is **10 m** less than the perimeter.

Question ID 7e3f8363

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: 7e3f8363

In the xy -plane, the graph of the linear function f contains the points $(0, 3)$ and $(7, 31)$. Which equation defines f , where $y = f(x)$?

- A. $f(x) = 28x + 34$
- B. $f(x) = 3x + 38$
- C. $f(x) = 4x + 3$
- D. $f(x) = 7x + 3$

Question ID Odd6227f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: Odd6227f

At how many points do the graphs of the equations $y = x + 20$ and $y = 8x$ intersect in the xy -plane?

- A. 0
- B. 1
- C. 2
- D. 8

Question ID 7efe5495

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 7efe5495

$$\begin{aligned}y &= 3x \\ 2x + y &= 12\end{aligned}$$

The solution to the given system of equations is (x, y) . What is the value of $5x$?

- A. 24
- B. 15
- C. 12
- D. 5

Question ID 1087f6c4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 1087f6c4

$$24.5x + 24.75y = 641$$

Isabel ordered topsoil and crushed stone, which cost a total of \$641, for her garden. The given equation represents the relationship between the number of cubic yards of topsoil, x , and the number of tons of crushed stone, y , Isabel ordered. How much more, in dollars, did a ton of crushed stone cost Isabel than a cubic yard of topsoil?

Question ID 71189542

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 71189542

A group of 202 people went on an overnight camping trip, taking 60 tents with them. Some of the tents held 2 people each, and the rest held 4 people each. Assuming all the tents were filled to capacity and every person got to sleep in a tent, exactly how many of the tents were 2-person tents?

- A. 30
- B. 20
- C. 19
- D. 18

Question ID 9d4270fe

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 9d4270fe

A company that creates and sells tape dispensers calculates its monthly profit, in dollars, by subtracting its fixed monthly costs, in dollars, from its monthly sales revenue, in dollars. The equation $15,000 = 2.00x - 4,500$ represents this situation for a month where x tape dispensers are created and sold. Which statement is the best interpretation of $2.00x$ in this context?

- A. The monthly sales revenue, in dollars, from selling x tape dispensers
- B. The monthly sales revenue, in dollars, from each tape dispenser sold
- C. The monthly cost, in dollars, of creating each tape dispenser
- D. The monthly cost, in dollars, of creating x tape dispensers

Question ID 64c85440

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	<div><div></div><div></div><div></div></div>

ID: 64c85440

In North America, the standard width of a parking space is at least 7.5 feet and no more than 9.0 feet. A restaurant owner recently resurfaced the restaurant’s parking lot and wants to determine the number of parking spaces, n , in the parking lot that could be placed perpendicular to a curb that is 135 feet long, based on the standard width of a parking space. Which of the following describes all the possible values of n ?

- A. $18 \leq n \leq 135$
- B. $7.5 \leq n \leq 9$
- C. $15 \leq n \leq 135$
- D. $15 \leq n \leq 18$

Question ID 7a5a74a6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 7a5a74a6

$3(2x - 6) - 11 = 4(x - 3) + 6$

If x is the solution to the equation above, what is the value of $x - 3$?

- A. $\frac{23}{2}$
- B. $\frac{17}{2}$
- C. $\frac{15}{2}$
- D. $-\frac{15}{2}$

Question ID 7625073d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 7625073d

The equation $7g + 7b = 840$ represents the number of blue tiles, b , and the number of green tiles, g , an artist needs for an 840-square-inch tile project. The artist needs 71 blue tiles for the project. How many green tiles does he need?

Question ID 968e9e51

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	<div><div></div><div></div><div></div></div>

ID: 968e9e51

$$y \leq x$$

$$y \leq -x$$

Which of the following ordered pairs (x,y) is a solution to the system of inequalities above?

- A. $(1,0)$
- B. $(-1,0)$
- C. $(0,1)$
- D. $(0,-1)$

Question ID aa85b138

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: aa85b138

$2n + 6 = 14$

A tree had a height of 6 feet when it was planted. The equation above can be used to find how many years n it took the tree to reach a height of 14 feet. Which of the following is the best interpretation of the number 2 in this context?

- A. The number of years it took the tree to double its height
- B. The average number of feet that the tree grew per year
- C. The height, in feet, of the tree when the tree was 1 year old
- D. The average number of years it takes similar trees to grow 14 feet

Question ID 15daa8d6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 15daa8d6

$$2x + 16 = a(x + 8)$$

In the given equation, a is a constant. If the equation has infinitely many solutions, what is the value of a ?

Question ID 12ee1edc

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 12ee1edc

$(b - 2)x = 8$

In the given equation, b is a constant. If the equation has no solution, what is the value of b ?

- A. 2
- B. 4
- C. 6
- D. 10

Question ID 620fe971

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: 620fe971

A team of workers has been moving cargo off of a ship. The equation below models the approximate number of tons of cargo, y , that remains to be moved x hours after the team started working.

$y = 120 - 25x$

The graph of this equation in the xy -plane is a line. What is the best interpretation of the x -intercept in this context?

- A. The team will have moved all the cargo in about 4.8 hours.
- B. The team has been moving about 4.8 tons of cargo per hour.
- C. The team has been moving about 25 tons of cargo per hour.
- D. The team started with 120 tons of cargo to move.

Question ID 17d80dc3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: 17d80dc3

In the xy -plane, line k has a slope of 5 and a y -intercept of $(0, -35)$. What is the x -coordinate of the x -intercept of line k ?

Question ID 6e6a3241

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 6e6a3241

$x + 5y = 5$

$2x - y = -4$

Which of the following graphs in the xy -plane could be used to solve the system of equations above?

- A.
- B.
- C.
- D.

Question ID af711d1b

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: af711d1b

Distance (kilometers)	Average time (minutes)
0.32	8
0.56	14
0.68	17

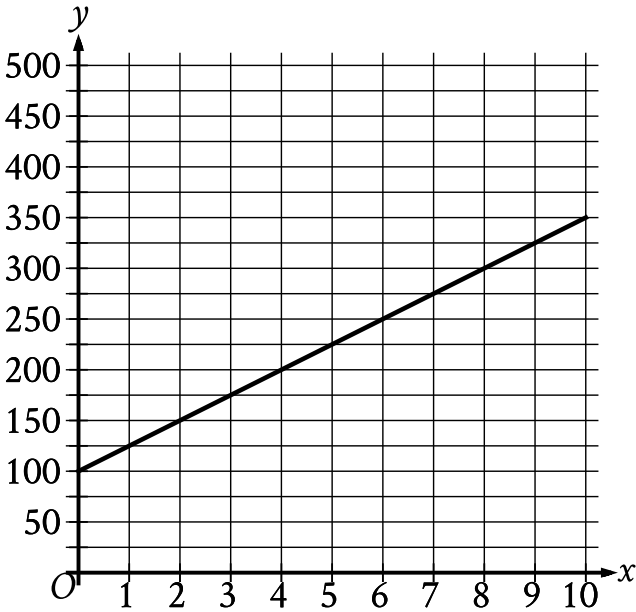
The table gives the average time t , in minutes, it takes Carly to travel a certain distance d , in kilometers. Which equation could represent this linear relationship?

- A. $t = 4d$
- B. $t = \frac{1}{25}d$
- C. $t = 25d$
- D. $t = \frac{1}{4}d$

Question ID 5cf1bbc9

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: 5cf1bbc9



The graph of the function f , where $y = f(x)$, gives the total cost y , in dollars, for a certain video game system and x games. What is the best interpretation of the slope of the graph in this context?

- A. Each game costs \$25.
- B. The video game system costs \$100.
- C. The video game system costs \$25.
- D. Each game costs \$100.

Question ID 9c7741c6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 9c7741c6

On a 210-mile trip, Cameron drove at an average speed of 60 miles per hour for the first x hours. He then completed the trip, driving at an average speed of 50 miles per hour for the remaining y hours. If $x = 1$, what is the value of y ?

Question ID 018a2704

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 018a2704

If $46 = 16 + 2(x - 8)$, what is the value of $2(x - 8)$?

- A. 16
- B. 23
- C. 30
- D. 38

Question ID ed92fb68

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: ed92fb68

$$4x + 5y = 100$$

$$5x + 4y = 62$$

If the system of equations above has solution (x, y) ,
what is the value of $x + y$?

- A. 0
- B. 9
- C. 18
- D. 38

Question ID 606cdce7

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 606cdce7

x	y
−6	65
−3	56
3	38
6	29

The table shows four values of x and their corresponding values of y . There is a linear relationship between x and y . Which of the following equations represents this relationship?

- A. $9x + 3y = 141$
- B. $9x + 3y = 3$
- C. $3x + 9y = 141$
- D. $3x + 9y = 3$

Question ID 19fdf387

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 19fdf387

In the xy -plane, the graph of $y = x + 3$ intersects the graph of $y = 2x - 6$ at the point (a, b) . What is the value of a ?

- A. 3
- B. 6
- C. 9
- D. 12

Question ID a775af14

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: a775af14

In the xy -plane, the graph of the linear function f contains the points $(0, 2)$ and $(8, 34)$. Which equation defines f , where $y = f(x)$?

- A. $f(x) = 2x + 42$
- B. $f(x) = 32x + 36$
- C. $f(x) = 4x + 2$
- D. $f(x) = 8x + 2$

Question ID dae126d7

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: dae126d7

The boiling point of water at sea level is 212 degrees Fahrenheit ($^{\circ}\text{F}$). For every 550 feet above sea level, the boiling point of water is lowered by about 1°F . Which of the following equations can be used to find the boiling point B of water, in $^{\circ}\text{F}$, x feet above sea level?

- A. $B = 550 + \frac{x}{212}$
- B. $B = 550 - \frac{x}{212}$
- C. $B = 212 + \frac{x}{550}$
- D. $B = 212 - \frac{x}{550}$

Question ID bf5f80c6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	<div><div></div><div></div><div></div></div>

ID: bf5f80c6

$$y < -4x + 4$$

Which point (x, y) is a solution to the given inequality in the xy -plane?

- A. $(-4, 0)$
- B. $(0, 5)$
- C. $(2, 1)$
- D. $(2, -1)$

Question ID 80da233d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	<div><div></div><div></div><div></div></div>

ID: 80da233d

A certain elephant weighs 200 pounds at birth and gains more than 2 but less than 3 pounds per day during its first year. Which of the following inequalities represents all possible weights w , in pounds, for the elephant 365 days after birth?

- A. $400 < w < 600$
- B. $565 < w < 930$
- C. $730 < w < 1,095$
- D. $930 < w < 1,295$

Question ID 271f7e3f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: 271f7e3f

$$f(x) = \frac{(x + 7)}{4}$$

For the function f defined above, what is the value of $f(9) - f(1)$?

- A. 1
- B. 2
- C. $\frac{1}{4}$
- D. $\frac{9}{4}$

Question ID 70e29454

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 70e29454

$$a(3 - x) - b = -1 - 2x$$

In the equation above, a and b are constants. If the equation has infinitely many solutions, what are the values of a and b ?

- A. $a = 2$ and $b = 1$
- B. $a = 2$ and $b = 7$
- C. $a = -2$ and $b = 5$
- D. $a = -2$ and $b = -5$

Question ID b31c3117

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	<div><div></div><div></div><div></div></div>

ID: b31c3117

$$H = 120p + 60$$

The Karvonen formula above shows the relationship between Alice’s target heart rate H , in beats per minute (bpm), and the intensity level p of different activities. When $p = 0$, Alice has a resting heart rate. When $p = 1$, Alice has her maximum heart rate. It is recommended that p be between 0.5 and 0.85 for Alice when she trains. Which of the following inequalities describes Alice’s target training heart rate?

- A. $120 \leq H \leq 162$
- B. $102 \leq H \leq 120$
- C. $60 \leq H \leq 162$
- D. $60 \leq H \leq 102$

Question ID f09097b1

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: f09097b1

An agricultural scientist studying the growth of corn plants recorded the height of a corn plant at the beginning of a study and the height of the plant each day for the next 12 days. The scientist found that the height of the plant increased by an average of 1.20 centimeters per day for the 12 days. If the height of the plant on the last day of the study was 36.8 centimeters, what was the height, in centimeters, of the corn plant at the beginning of the study?

Question ID c5082ce3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Systems of two linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: c5082ce3

The score on a trivia game is obtained by subtracting the number of incorrect answers from twice the number of correct answers. If a player answered 40 questions and obtained a score of 50, how many questions did the player answer correctly?

Question ID c651cc56

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: c651cc56

x	$f(x)$
0	-2
2	4
6	16

Some values of the linear function f are shown in the table above. What is the value of $f(3)$?

- A. 6
- B. 7
- C. 8
- D. 9

Question ID c22b5f25

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: c22b5f25

In the xy -plane, the points $(-2,3)$ and $(4,-5)$ lie on the graph of which of the following linear functions?

- A. $f(x) = x + 5$
- B. $f(x) = \frac{1}{2}x + 4$
- C. $f(x) = -\frac{4}{3}x + \frac{1}{3}$
- D. $f(x) = -\frac{3}{2}x + 1$

Question ID 6cb9bf45

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear inequalities in one or two variables	<div><div></div><div></div><div></div></div>

ID: 6cb9bf45

$y > 7x - 4$

For which of the following tables are all the values of x and their corresponding values of y solutions to the given inequality?

A.

x	y
3	13
5	27
8	48

B.

x	y
3	17
5	31
8	52

C.

x	y
3	21
5	27
8	52

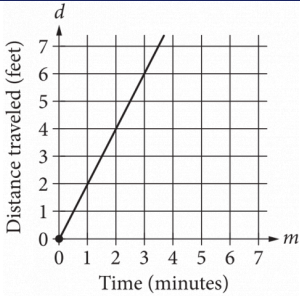
D.

x	y
3	21
5	35
8	56

Question ID 11e1ab81

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: 11e1ab81



The graph above shows the distance traveled d , in feet, by a product on a conveyor belt m minutes after the product is placed on the belt. Which of the following equations correctly relates d and m ?

- A. $d = 2m$
- B. $d = \frac{1}{2}m$
- C. $d = m + 2$
- D. $d = 2m + 2$

Question ID df78b361

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: df78b361

Lily made **36** cups of jam. Lily then filled x small containers and y large containers with all the jam she made. The equation $4x + 6y = 36$ represents this situation. Which is the best interpretation of $6y$ in this context?

- A. The number of large containers Lily filled
- B. The number of small containers Lily filled
- C. The total number of cups of jam in the large containers
- D. The total number of cups of jam in the small containers

Question ID 4fe4fd7c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: 4fe4fd7c

$c(x) = mx + 500$

A company’s total cost $c(x)$, in dollars, to produce x shirts is given by the function above, where m is a constant and $x > 0$. The total cost to produce 100 shirts is \$800. What is the total cost, in dollars, to produce 1000 shirts? (Disregard the \$ sign when gridding your answer.)

Question ID 0d1b1e35

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 0d1b1e35

A batch of banana milkshakes consists of **4** cups of ice cream and **2** bananas and has **1,114 milligrams (mg)** of calcium. There is **276 mg** of calcium in **1** cup of the ice cream used to make this batch of milkshakes. How much calcium, **in mg**, is in **1** banana?

- A. 5
- B. 10
- C. 419
- D. 1,104

Question ID 620abf36

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 620abf36

If $5(x + 4) = 4(x + 4) + 29$, what is the value of $x + 4$?

- A. -4
- B. 25
- C. 29
- D. 33

Question ID d62ad380

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: d62ad380

An artist paints and sells square tiles. The selling price P , in dollars, of a painted tile is a linear function of the side length of the tile s , in inches, as shown in the table below.

Side length, s (inches)	Price, P (dollars)
3	8.00
6	18.00
9	28.00

Which of the following could define the relationship between s and P ?

- A. $P = 3s + 10$
- B. $P = \frac{10}{3}s + 8$
- C. $P = \frac{10}{3}s - 2$
- D. $P = \frac{3}{10}s - \frac{1}{10}$

Question ID 23dedddd

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: 23dedddd

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. $f(x) = 4x + 8$

Question ID a91a2b75

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	<div><div></div><div></div><div></div></div>

ID: a91a2b75

The function f is defined by $f(x) = -9x + 9$. What is the y -coordinate of the y -intercept of the graph of $y = f(x)$ in the xy -plane?

Question ID 4f669597

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in one variable	<div><div></div><div></div><div></div></div>

ID: 4f669597

$2(p + 1) + 8(p - 1) = 5p$

What value of p is the solution of the equation above?

Question ID 431c3038

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 431c3038

In an article about exercise, it is estimated that a 160-pound adult uses 200 calories for every 30 minutes of hiking and 150 calories for every 30 minutes of bicycling. An adult who weighs 160 pounds has completed 1 hour of bicycling. Based on the article, how many hours should the adult hike to use a total of 1,900 calories from bicycling and hiking?

- A. 9.5
- B. 8.75
- C. 6
- D. 4

Question ID e336a1d2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: e336a1d2

A cube has an edge length of ~~4~~1 inches. What is the volume, in cubic inches, of the cube?

- A. ~~16~~4
- B. 1,~~6~~81
- C. 10,~~0~~86
- D. ~~6~~8,921

Question ID c0586eb5

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: c0586eb5

A cylinder has a diameter of **8** inches and a height of **12** inches. What is the volume, in cubic inches, of the cylinder?

- A. **16π**
- B. **96π**
- C. **192π**
- D. **768π**

Question ID 03c6994f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 03c6994f

Square A has side lengths that are **246** times the side lengths of square B. The area of square A is ***k*** times the area of square B. What is the value of ***k***?

- A. **60,516**
- B. **492**
- C. **246**
- D. **123**

Question ID 151eda3c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 151eda3c

A manufacturing company produces two sizes of cylindrical containers that each have a height of 50 centimeters. The radius of container A is 16 centimeters, and the radius of container B is 25% longer than the radius of container A. What is the volume, in cubic centimeters, of container B?

- A. $16,000 \pi$
- B. $20,000 \pi$
- C. $25,000 \pi$
- D. $31,250 \pi$

Question ID 5a7e3b46

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Right triangles and trigonometry	<div><div></div><div></div><div></div></div>

ID: 5a7e3b46

In $\triangle ABC$, $\angle B$ is a right angle and the length of \overline{BC} is **136** millimeters. If $\cos A = \frac{3}{5}$, what is the length, in millimeters, of \overline{AB} ?

- A. **34**
- B. **102**
- C. **136**
- D. **170**

Question ID a2659088

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: a2659088

A right circular cylinder has a height of **8 meters (m)** and a base with a radius of **12 m**. What is the volume, **in m³**, of the cylinder?

- A. **8π**
- B. **20π**
- C. **768π**
- D. **$1,152\pi$**

Question ID 38517165

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 38517165

A circle has a circumference of 31π centimeters. What is the diameter, in centimeters, of the circle?

Question ID 8e7689e0

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

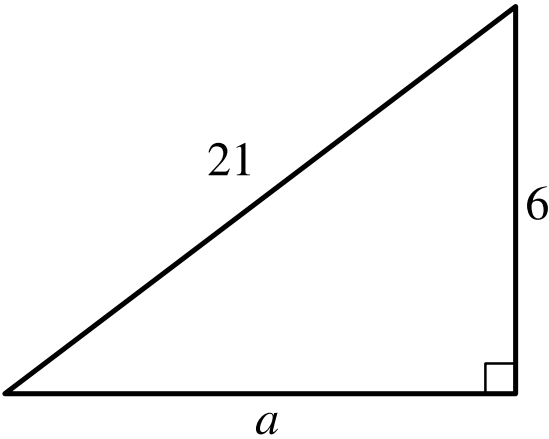
ID: 8e7689e0

The number of radians in a 720-degree angle can be written as $a\pi$, where a is a constant. What is the value of a ?

Question ID de550be0

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Right triangles and trigonometry	<div><div></div><div></div><div></div></div>

ID: de550be0



Note: Figure not drawn to scale.

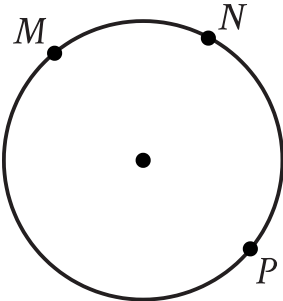
For the triangle shown, which expression represents the value of a ?

- A. $\sqrt{21^2 - 6^2}$
- B. $21^2 - 6^2$
- C. $\sqrt{21 - 6}$
- D. $21 - 6$

Question ID 800e71b8

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: 800e71b8



Points M , N , and P lie on the circle shown. On this circle, minor arc MN has a length of **39** centimeters and major arc MPN has a length of **195** centimeters. What is the circumference, in centimeters, of the circle shown?

- A. **39**
- B. **156**
- C. **195**
- D. **234**

Question ID fc8aa563

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: fc8aa563

What is the center of the circle in the xy -plane defined by the equation $(x - 1)^2 + (y + 7)^2 = 1$?

- A. $(-1, -7)$
- B. $(-1, 7)$
- C. $(1, -7)$
- D. $(1, 7)$

Question ID 74d8b897

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: 74d8b897

An angle has a measure of $\frac{9\pi}{20}$ radians. What is the measure of the angle in degrees?

Question ID ee540927

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: ee540927

$x^2 + 58x + y^2 = 0$

In the xy -plane, the graph of the given equation is a circle. What are the coordinates (x, y) of the center of the circle?

- A. $(0, 29)$
- B. $(0, -29)$
- C. $(29, 0)$
- D. $(-29, 0)$

Question ID a0cacec1

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: a0cacec1

An angle has a measure of $\frac{16\pi}{15}$ radians. What is the measure of the angle, in degrees?

Question ID 2d521ca9

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: 2d521ca9

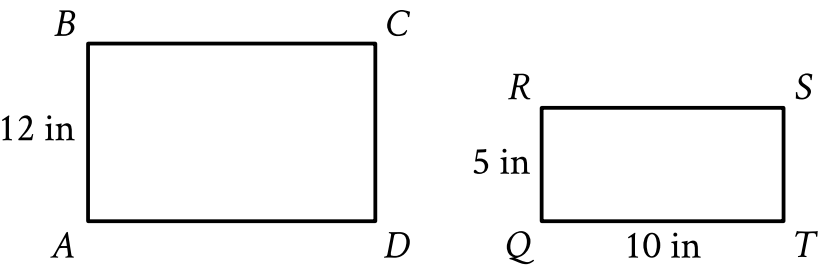
The measure of angle Z is 60° . What is the measure, in radians, of angle Z ?

- A. $\frac{1}{6}\pi$
- B. $\frac{1}{3}\pi$
- C. $\frac{2}{3}\pi$
- D. 1π

Question ID e9c5bfb2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: e9c5bfb2



Note: Figure not drawn to scale.

Rectangles $ABCD$ and $QRST$ shown are similar, where A , B , C , and D correspond to Q , R , S , and T , respectively. What is the length, in inches (**in**), of \overline{AD} ?

- A. 60
- B. 24
- C. 17
- D. 10

Question ID 856372ca

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: 856372ca

In the xy -plane, a circle with radius 5 has center $(-8,6)$. Which of the following is an equation of the circle?

- A. $(x-8)^2+(y+6)^2=25$
- B. $(x+8)^2+(y-6)^2=25$
- C. $(x-8)^2+(y+6)^2=5$
- D. $(x+8)^2+(y-6)^2=5$

Question ID 9c0a0eca

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 9c0a0eca

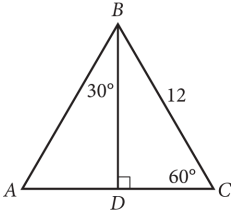
A triangle has a base length of **10** centimeters and a corresponding height of **70** centimeters. What is the area, in square centimeters, of the triangle?

- A. **700**
- B. **350**
- C. **175**
- D. **80**

Question ID bf8d843e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Right triangles and trigonometry	<div><div></div><div></div><div></div></div>

ID: bf8d843e



In $\triangle ABC$ above, what is the length of \overline{AD} ?

- A. 4
- B. 6
- C. $6\sqrt{2}$
- D. $6\sqrt{3}$

Question ID aef4fd8a

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: aef4fd8a

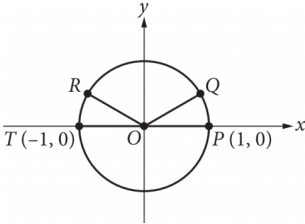
The length of each side of a square is **94** centimeters (cm). Which expression gives the area, in **cm²**, of the square?

- A. **2 · 94**
- B. **2 · 94 · 94**
- C. **4 · 94**
- D. **94 · 94**

Question ID 95ba2d09

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: 95ba2d09



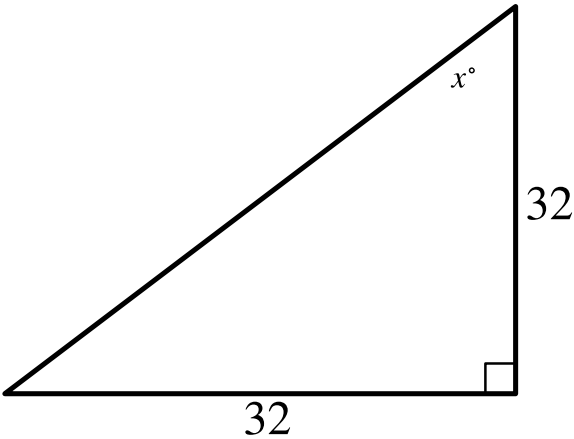
In the xy -plane above, points P , Q , R , and T lie on the circle with center O . The degree measures of angles POQ and ROT are each 30° . What is the radian measure of angle QOR ?

- A. $\frac{5}{6} \pi$
- B. $\frac{3}{4} \pi$
- C. $\frac{2}{3} \pi$
- D. $\frac{1}{3} \pi$

Question ID a71617d3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Right triangles and trigonometry	<div><div></div><div></div><div></div></div>

ID: a71617d3



Note: Figure not drawn to scale.

In the triangle shown, what is the value of x ?

Question ID a5aee181

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Right triangles and trigonometry	<div><div></div><div></div><div></div></div>

ID: a5aee181

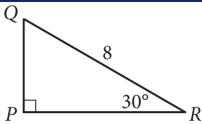
The length of a rectangle’s diagonal is $5\sqrt{17}$, and the length of the rectangle’s shorter side is 5. What is the length of the rectangle’s longer side?

- A. $\sqrt{17}$
- B. 20
- C. $15\sqrt{2}$
- D. 400

Question ID 13d9a1c3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Right triangles and trigonometry	<div><div></div><div></div><div></div></div>

ID: 13d9a1c3



In the right triangle shown above, what is the length of \overline{PQ} ?

Question ID a2e76b60

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: a2e76b60

A cylindrical can containing pieces of fruit is filled to the top with syrup before being sealed. The base of the can has an area of 75 cm^2 , and the height of the can is 10 cm. If 110 cm^3 of syrup is needed to fill the can to the top, which of the following is closest to the total volume of the pieces of fruit in the can?

- A. 7.5 cm^3
- B. 185 cm^3
- C. 640 cm^3
- D. 750 cm^3

Question ID 468613c0

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 468613c0

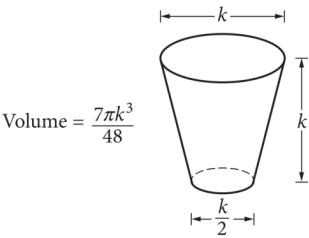
A triangle has a base length of **56** centimeters and a height of **112** centimeters. What is the area, in square centimeters, of the triangle?

- A. **168**
- B. **1,568**
- C. **3,136**
- D. **6,272**

Question ID 37dde49f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: 37dde49f



The glass pictured above can hold a maximum volume of 473 cubic centimeters, which is approximately 16 fluid ounces. What is the value of k , in centimeters?

- A. 2.52
- B. 7.67
- C. 7.79
- D. 10.11

Question ID 82c8325f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: 82c8325f

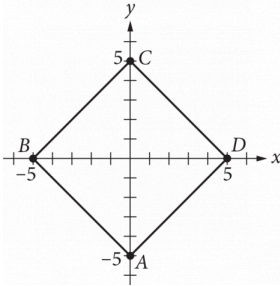
A circle in the xy -plane has its center at $(-4, 5)$ and the point $(-8, 8)$ lies on the circle. Which equation represents this circle?

- A. $(x + 4)^2 + (y + 5)^2 = 5$
- B. $(x + 4)^2 + (y - 5)^2 = 5$
- C. $(x + 4)^2 + (y + 5)^2 = 25$
- D. $(x - 4)^2 + (y - 5)^2 = 25$

Question ID cf53cb56

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Area and volume	<div><div></div><div></div><div></div></div>

ID: cf53cb56



In the xy -plane shown, square $ABCD$ has its diagonals on the x - and y -axes. What is the area, in square units, of the square?

- A. 20
- B. 25
- C. 50
- D. 100

Question ID b96ff36e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Geometry and Trigonometry	Circles	<div><div></div><div></div><div></div></div>

ID: b96ff36e

In the xy -plane, the graph of the equation $(x - 3)^2 + (y - 5)^2 = 9$ is a circle. The point $(6, c)$, where c is a constant, lies on this circle. What is the value of c ?