Question ID 2eb1f9e1

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 2eb1f9e1

A line in the *xy*-plane has a slope of 9 and passes through the point $(0, -5)$. The equation $y = px + r$ defines the line, where p and r are constants. What is the value of p?

Question ID 80f346ea

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 80f346ea

A line passes through the points $(4, 6)$ and $(15, 24)$ in the *xy*-plane. What is the slope of the line?

Question ID 38f53fa4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 38f53fa4

Figure A and figure B are both regular polygons. The sum of the perimeter of figure A and the perimeter of figure B is 63 inches. The equation $3x + 6y = 63$ represents this situation, where x is the number of sides of figure A and y is the number of sides of figure B. Which statement is the best interpretation of 6 in this context?

A. Each side of figure B has a length of 6 inches.

B. The number of sides of figure B is 6.

C. Each side of figure A has a length of 6 inches.

D. The number of sides of figure A is 6.

Question ID 808e9650

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 808e9650

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 a39e1c3b

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: a39e1c3b

What is the slope of the graph of $y = \frac{1}{4}(27x + 15) + 7x$ in the *xy*-plane?

Question ID dfbe86a3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: dfbe86a3

Line r is defined by the equation $4x - 9y = 3$. Line s is parallel to line r in the *xy*-plane. What is the slope of line s?

A. $\frac{9}{4}$

B. $\frac{4}{9}$

C. -4

D. -9

Question ID d609d1ce

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: d609d1ce

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 ac7cddee

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: ac7cddee

When line n is graphed in the *xy*-plane, it has an *x*-intercept of $(-4, 0)$ and a *y*-intercept of $(0, \frac{86}{3})$. What is the slope of line n?

A. $\frac{3}{344}$

B. $\frac{6}{43}$

C. $\frac{43}{6}$

D. $\frac{344}{3}$

Question ID e2b60318

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: e2b60318

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

Question ID 28c92268

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 28c92268

A total of 2 squares each have side length r. A total of 6 equilateral triangles each have side length t. None of these squares and triangles shares a side. The sum of the perimeters of all these squares and triangles is 210. Which equation represents this situation?

A. $6r + 24t = 210$

B. $2r + 6t = 210$

C. $8r + 18t = 210$

D. $6r + 2t = 210$

Question ID d7941984

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: d7941984

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 a2bf1dd6

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: a2bf1dd6

Line k is defined by $y = 7x + \frac{1}{8}$. Line j is perpendicular to line k in the *xy*-plane. What is the slope of line j?

A. -8

B. $-\frac{1}{7}$

C. $\frac{1}{8}$

D. 7

Question ID cd13910e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: cd13910e

What is the slope of the graph of $y = \frac{5x}{13} - 23$ in the *xy*-plane?

Question ID bea3ba96

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: bea3ba96

$$24.5x + 24.75y = 641$$

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 0edb622e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 0edb622e

If the graph of $27x + 33y = 297$ is shifted down 5 units in the *xy*-plane, what is the *y*-intercept of the resulting graph?

A. $(0, 4)$

B. $(0, 6)$

C. $(0, 14)$

D. $(0, 28)$

Question ID 3c65fb48

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 3c65fb48

x	y
-6	$n+184$
-3	$n+92$
0	n

The table shows three values of x and their corresponding values of y, where n is a constant, for the linear relationship between x and y. What is the slope of the line that represents this relationship in the *xy*-plane?

A. $-\frac{92}{3}$

B. $-\frac{3}{92}$

C. $\frac{n+92}{-3}$

D. $\frac{2n-92}{3}$

Question ID e0a370ba

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: e0a370ba

A neighborhood consists of a 2-hectare park and a 35-hectare residential area. The total number of trees in the neighborhood is $3{,}934$. The equation $2x + 35y = 3{,}934$ represents this situation. Which of the following is the best interpretation of x in this context?

A. The average number of trees per hectare in the park

B. The average number of trees per hectare in the residential area

C. The total number of trees in the park

D. The total number of trees in the residential area

Question ID 0dac9e81

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 0dac9e81

In the *xy*-plane, line k passes through the points $(0, -5)$ and $(1, -1)$. Which equation defines line k?

A. $y = -x + \frac{1}{4}$

B. $y = \frac{1}{4}x - 5$

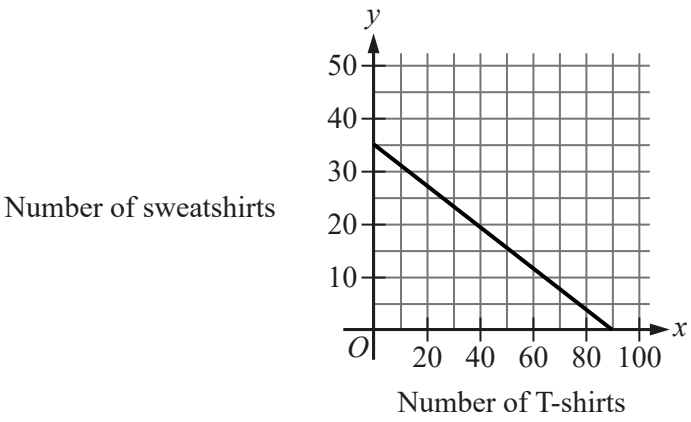
C. $y = -x + 4$

D. $y = 4x - 5$

Question ID 9153c6e2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 9153c6e2



The graph models the relationship between the number of T-shirts, x, and the number of sweatshirts, y, that Kira can purchase for a school fundraiser. Which equation could represent this relationship?

A. $y = 7x + 18$

B. $7x + 18y = 630$

C. $y = 18x + 7$

D. $18x + 7y = 630$

Question ID 1c769c42

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 1c769c42

At a state fair, attendees can win tokens that are worth a different number of points depending on the shape. One attendee won S square tokens and C circle tokens worth a total of $1{,}120$ points. The equation $80S + 90C = 1{,}120$ represents this situation. How many more points is a circle token worth than a square token?

A. 950

B. 90

C. 80

D. 10

Question ID 58c789fd

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 58c789fd

In the *xy*-plane, line s passes through the point $(0, 0)$ and is parallel to the line represented by the equation $y = 18x + 2$. If line s also passes through the point $(4, d)$, what is the value of d?

A. 2

B. 18

C. 72

D. 74

Question ID e4e977a4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: e4e977a4

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 432f9706

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 432f9706

A certain township consists of a 5-hectare industrial park and a 24-hectare neighborhood. The total number of trees in the township is $4{,}529$. The equation $5x + 24y = 4{,}529$ represents this situation. Which of the following is the best interpretation of x in this context?

A. The average number of trees per hectare in the industrial park

B. The average number of trees per hectare in the neighborhood

C. The total number of trees in the industrial park

D. The total number of trees in the neighborhood

Question ID 542971a2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 542971a2

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 cec3c002

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: cec3c002

A store sells two different-sized containers of blueberries. The store's sales of these blueberries totaled 896.86 dollars last month. The equation $4.51x + 6.07y = 896.86$ represents this situation, where x is the number of smaller containers sold and y is the number of larger containers sold. According to the equation, what is the price, in dollars, of each smaller container?

Question ID 524a5350

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 524a5350

In the *xy*-plane, line t passes through the points $(0, 9)$ and $(1, 17)$. Which equation defines line t?

A. $y = \frac{1}{8}x + 9$

B. $y = x + \frac{1}{8}$

C. $y = x + 8$

D. $y = 8x + 9$

Question ID 012136ca

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 012136ca

x	1	2	3
y	11	16	21

The table shows three values of x and their corresponding values of y. Which equation represents the linear relationship between x and y?

A. $y = 5x + 6$

B. $y = 5x + 11$

C. $y = 6x + 5$

D. $y = 6x + 11$

Question ID ddfd6303

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: ddfd6303

$$2x + y = 37$$

In triangle QRS, sides QR and RS each have a length of x centimeters and side SQ has a length of y centimeters. The given equation represents this situation. Which of the following is the best interpretation of 37 in this context?

A. The difference, in centimeters, between the lengths of sides QR and SQ

B. The difference, in centimeters, between the lengths of sides QR and RS

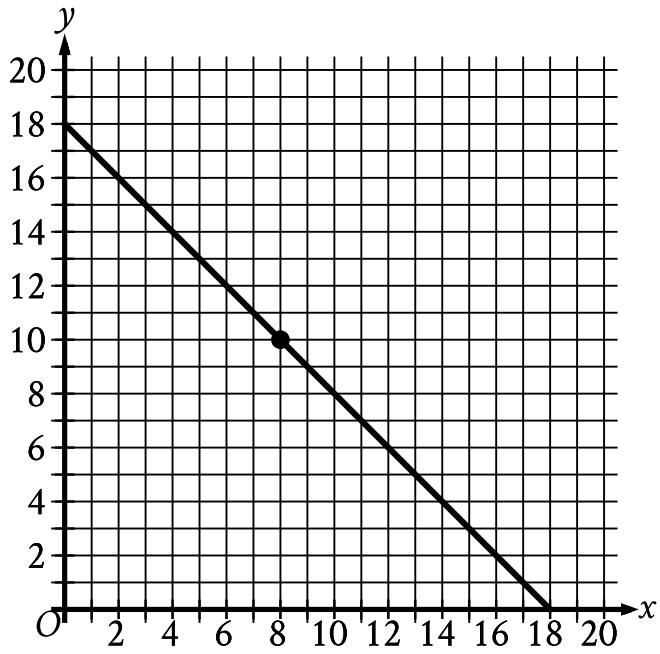
C. The sum of the lengths, in centimeters, of the three sides of the triangle

D. The length, in centimeters, of one of the two sides of equal length

Question ID 50fef429

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 50fef429



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 dd31a371

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: dd31a371

$$2.5b + 5r = 80$$

The given equation describes the relationship between the number of birds, b, and the number of reptiles, r, that can be cared for at a pet care business on a given day. If the business cares for 16 reptiles on a given day, how many birds can it care for on this day?

A. 0

B. 5

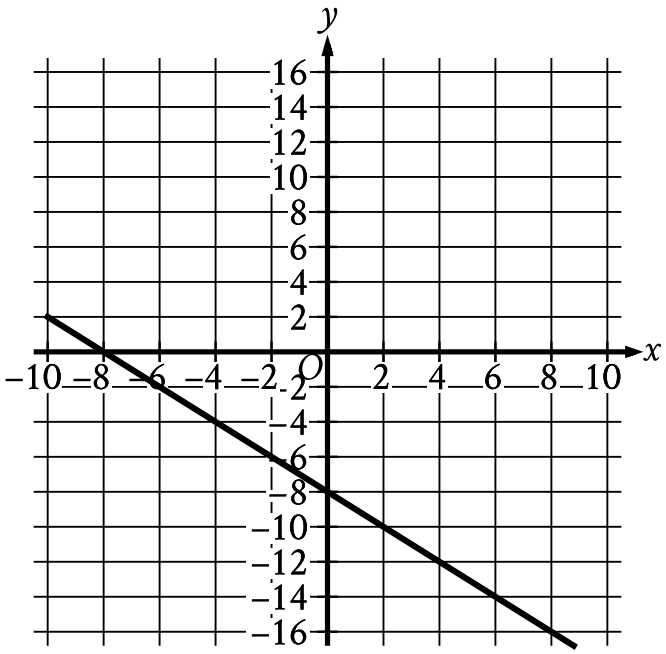
C. 40

D. 80

Question ID 96ddbb6a

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 96ddbb6a



What is an equation of the graph shown?

A. $y = -2x - 8$

B. $y = x - 8$

C. $y = -x - 8$

D. $y = 2x - 8$

Question ID 71dc13cb

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 71dc13cb

Line t in the *xy*-plane has a slope of $-\frac{1}{3}$ and passes through the point $(9, 10)$. Which equation defines line t?

A. $y = 13x - \frac{1}{3}$

B. $y = 9x + 10$

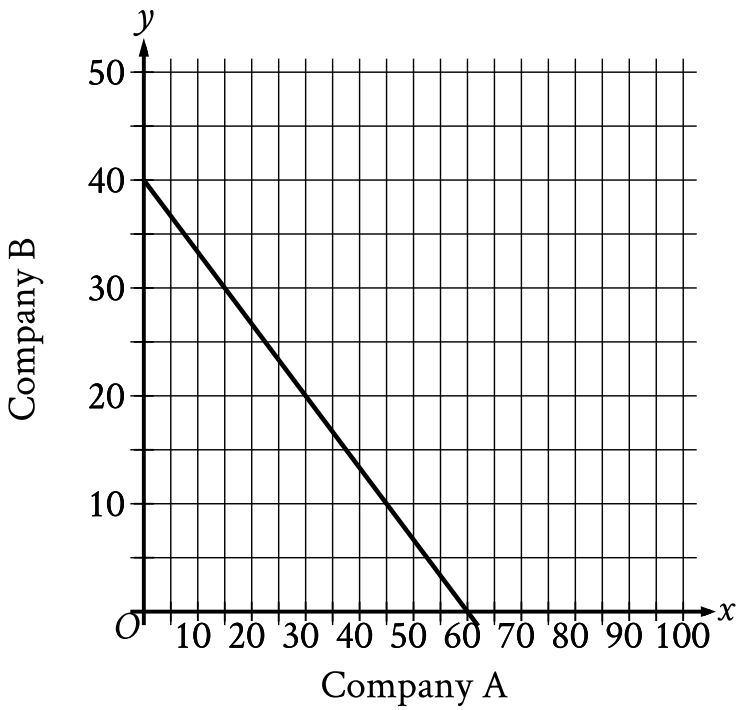
C. $y = -\frac{x}{3} + 10$

D. $y = -\frac{x}{3} + 13$

Question ID 607bf204

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 607bf204



The graph shows the relationship between the number of shares of stock from Company A, x, and the number of shares of stock from Company B, y, that Simone can purchase. Which equation could represent this relationship?

A. $y = 8x + 12$

B. $8x + 12y = 480$

C. $y = 12x + 8$

D. $12x + 8y = 480$

Question ID c4aed842

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: c4aed842

A chemist combines water and acetic acid to make a mixture with a volume of 56 milliliters (mL). The volume of acetic acid in the mixture is 10 mL. What is the volume of water, in mL, in the mixture? (Assume that the volume of the mixture is the sum of the volumes of water and acetic acid before they were mixed.)

Question ID b272276f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: b272276f

What is the slope of the graph of $y = \frac{1}{3}(29x + 10) + 5x$ in the *xy*-plane?

Question ID 9df126c4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 9df126c4

What is the slope of the graph of $10x - 5y = -12$ in the *xy*-plane?

A. -2

B. $-\frac{5}{6}$

C. $\frac{5}{6}$

D. 2

Question ID 0969c4e8

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Medium

ID: 0969c4e8

Line k is defined by $y = \frac{17}{7}x + 4$. Line j is parallel to line k in the *xy*-plane. What is the slope of line j?

A. $\frac{7}{17}$

B. $\frac{17}{7}$

C. 4

D. 17