

Question ID dcce85c2

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: dcce85c2

What is the y -coordinate of the y -intercept of the graph of $\frac{3x}{7} = -\frac{5y}{9} + 21$ in the xy -plane?

Question ID 2226c9a5

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 2226c9a5

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 772b3070

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 772b3070

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 6d1cc26a

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 6d1cc26a

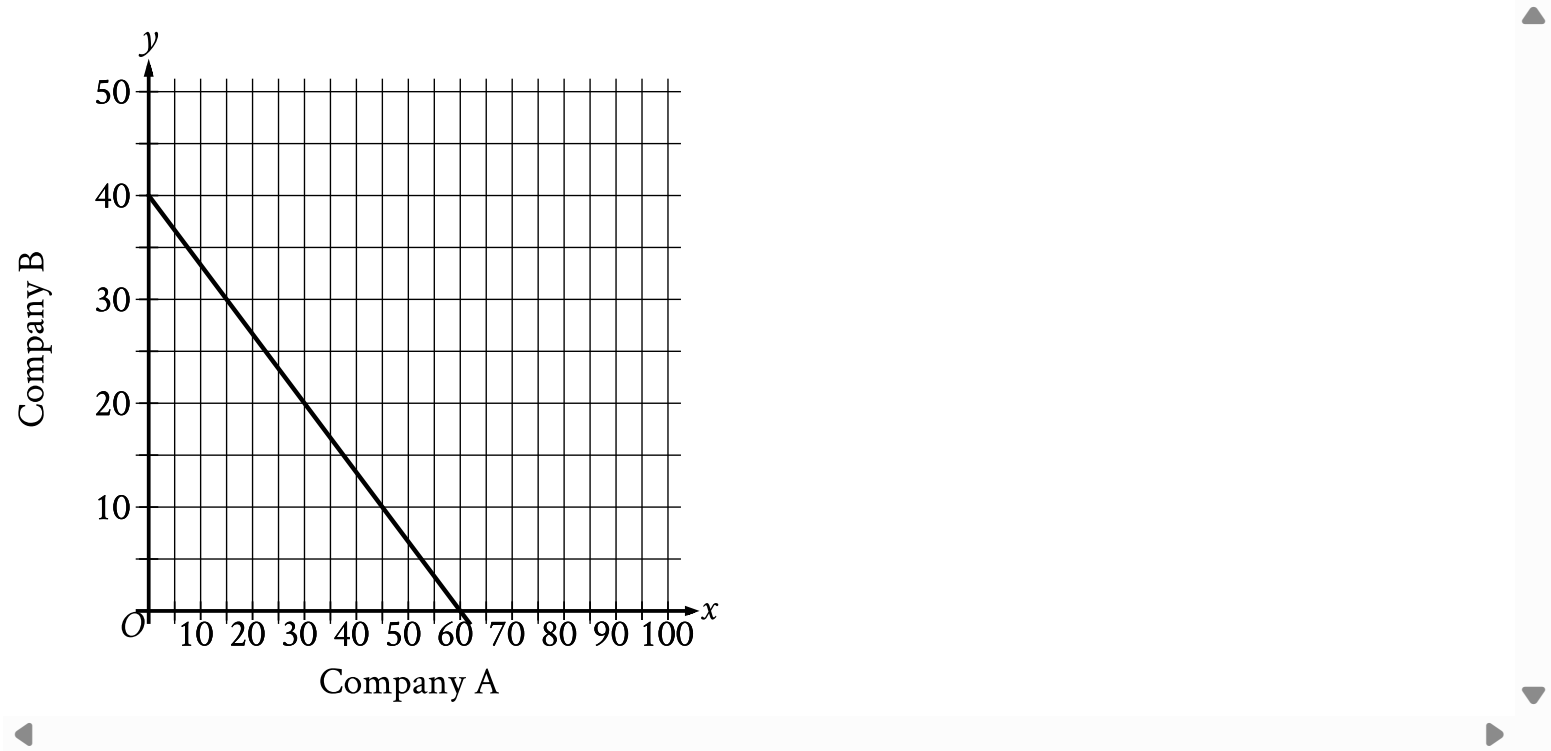
Line h is defined by $\frac{1}{5}x + \frac{1}{7}y - 70 = 0$. Line j is perpendicular to line h in the xy -plane. What is the slope of line j ?

- A. $-\frac{7}{5}$
- B. $-\frac{5}{7}$
- C. $\frac{7}{5}$
- D. $\frac{5}{7}$

Question ID 75dc50c6

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 75dc50c6



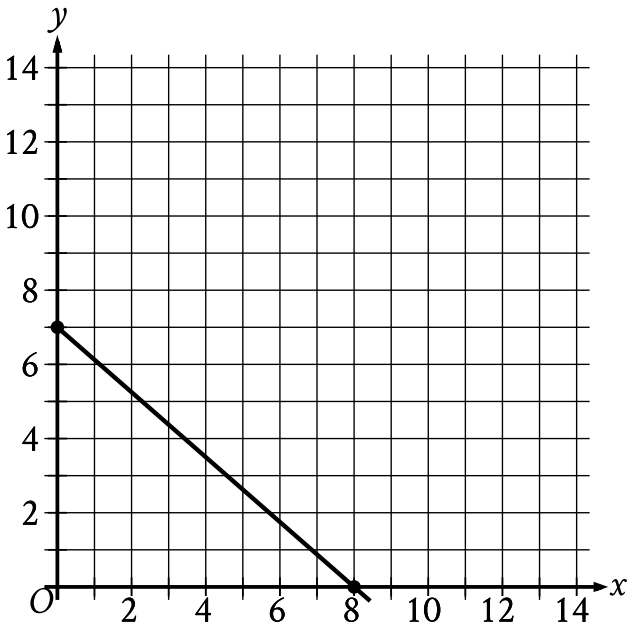
The graph shows the relationship between the number of shares of stock from Company A, x , and the number of shares of stock from Company B, y , that Simone can purchase. Which equation could represent this relationship?

- A. $y = 8x + 12$
- B. $8x + 12y = 480$
- C. $y = 12x + 8$
- D. $12x + 8y = 480$

Question ID 0989eea4

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 0989eea4



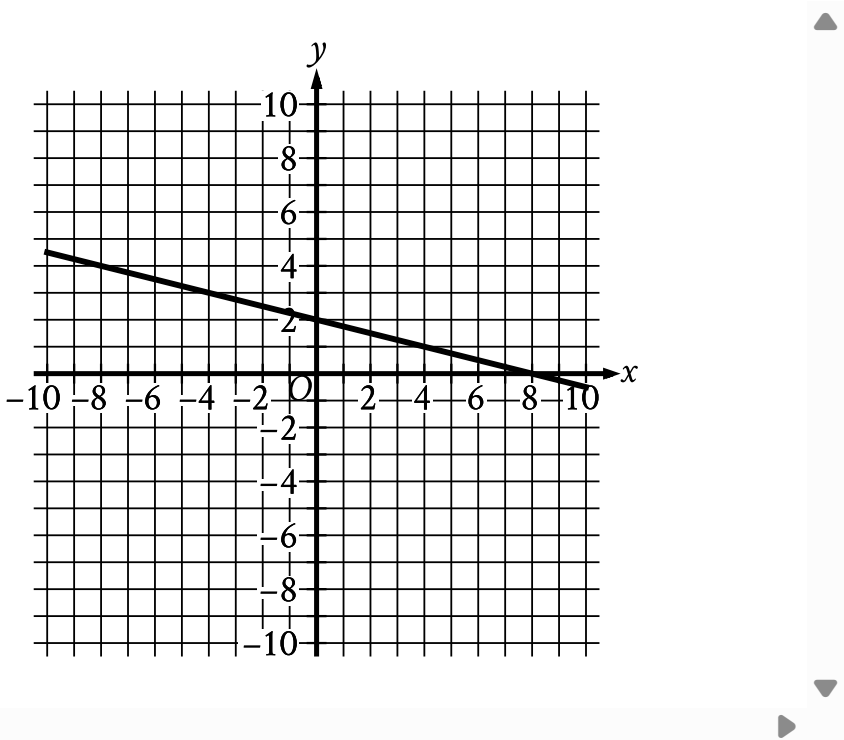
The point with coordinates $(d, 4)$ lies on the line shown. What is the value of d ?

- A. $\frac{7}{2}$
- B. $\frac{26}{7}$
- C. $\frac{24}{7}$
- D. $\frac{27}{8}$

Question ID 4522c150

Assessment	Test	Domain	Skill	Difficulty
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ID: 4522c150



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. $f(x) = -\frac{1}{4}x - 14$

Question ID 1ac409af

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 1ac409af

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 eae227e1

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: eae227e1

In the xy -plane, line ℓ passes through the point $(0, 0)$ and is parallel to the line represented by the equation $y = 8x + 2$. If line ℓ also passes through the point $(3, d)$, what is the value of d ?

Question ID 9e86a911

Assessment	Test	Domain	Skill	Difficulty
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ID: 9e86a911

In the xy -plane, line p has a slope of $-\frac{5}{3}$ and an x -intercept of $(-6, 0)$. What is the y -coordinate of the y -intercept of line p ?

Question ID 114dc543

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

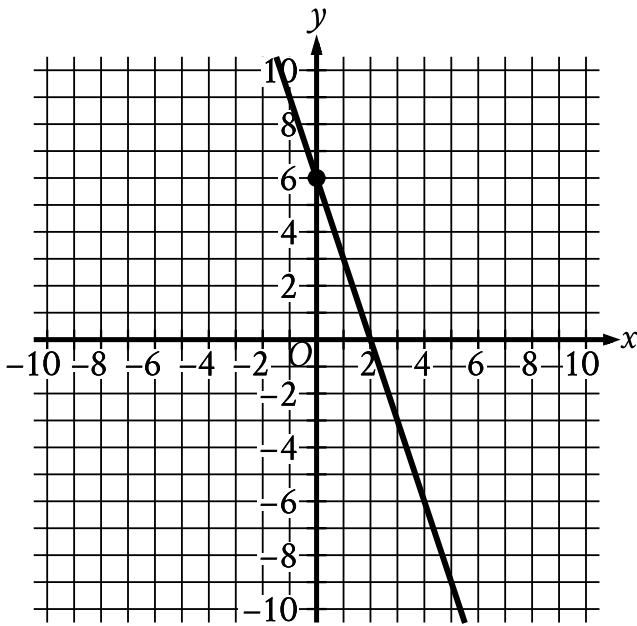
ID: 114dc543

Line p is defined by $4y + 8x = 6$. Line r is perpendicular to line p in the xy -plane. What is the slope of line r ?

Question ID 173484b2

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 173484b2



The graph shows a linear relationship between x and y . Which equation represents this relationship, where R is a positive constant?

- A. $Rx + 18y = 36$
- B. $Rx - 18y = -36$
- C. $18x + Ry = 36$
- D. $18x - Ry = -36$

Question ID 7c69b87f

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 7c69b87f

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

Question ID be1cb6f1

Assessment	Test	Domain	Skill	Difficulty
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ID: be1cb6f1

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 e0bf6e4e

Assessment	Test	Domain	Skill	Difficulty
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ID: e0bf6e4e

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

Question ID 31499031

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 31499031

$$5G + 45R = 380$$

At a school fair, students can win colored tokens that are worth a different number of points depending on the color. One student won G green tokens and R red tokens worth a total of 380 points. The given equation represents this situation. How many more points is a red token worth than a green token?

Question ID 68b9bd32

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 68b9bd32

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 3617a434

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 3617a434

$$\begin{aligned}5x + 7y &= 1 \\ ax + by &= 1\end{aligned}$$

In the given pair of equations, a and b are constants. The graph of this pair of equations in the xy -plane is a pair of perpendicular lines. Which of the following pairs of equations also represents a pair of perpendicular lines?

- A. $10x + 7y = 1$
 $ax - 2by = 1$
- B. $10x + 7y = 1$
 $ax + 2by = 1$
- C. $10x + 7y = 1$
 $2ax + by = 1$
- D. $5x - 7y = 1$
 $ax + by = 1$

Question ID 73807c8b

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 73807c8b

Keenan made **32** cups of vegetable broth. Keenan then filled ***x*** small jars and ***y*** large jars with all the vegetable broth he made. The equation **$3x + 5y = 32$** represents this situation. Which is the best interpretation of **$5y$** in this context?

- A. The number of large jars Keenan filled
- B. The number of small jars Keenan filled
- C. The total number of cups of vegetable broth in the large jars
- D. The total number of cups of vegetable broth in the small jars

Question ID abb3d9cc

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: abb3d9cc

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 311bf2f1

Assessment	Test	Domain	Skill	Difficulty
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ID: 311bf2f1

A certain apprentice has enrolled in **85** hours of training courses. The equation **$10x + 15y = 85$** represents this situation, where **x** is the number of on-site training courses and **y** is the number of online training courses this apprentice has enrolled in. How many more hours does each online training course take than each on-site training course?

Question ID 26fdb3e

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 26fdb3e

The graph of $7x + 2y = -31$ 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 $\frac{b}{a}$?

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

Question ID 609fc9a7

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 609fc9a7

x	y
-18	-48
7	52

The table shows two values of x and their corresponding values of y . In the xy -plane, the graph of the linear equation representing this relationship passes through the point $(\frac{1}{7}, a)$. What is the value of a ?

- A. $-\frac{4}{11}$
- B. $-\frac{4}{77}$
- C. $\frac{4}{7}$
- D. $\frac{172}{7}$

Question ID 9767a58f

Assessment	Test	Domain	Skill	Difficulty
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ID: 9767a58f

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 347a3050

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 347a3050

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

Question ID 259829c6

Assessment	Test	Domain	Skill	Difficulty
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ID: 259829c6

$\frac{3}{5}x + \frac{3}{4}y = 7$

Which table gives three values of *x* and their corresponding values of *y* for the given equation?

A.

<i>x</i>	<i>y</i>
1	$\frac{113}{20}$
2	$\frac{101}{20}$
4	$\frac{77}{20}$

B.

<i>x</i>	<i>y</i>
1	$\frac{47}{5}$
2	$\frac{44}{5}$
4	$\frac{38}{5}$

C.

<i>x</i>	<i>y</i>
1	$\frac{148}{15}$
2	$\frac{136}{15}$
4	$\frac{112}{15}$

D.

<i>x</i>	<i>y</i>
1	$\frac{128}{15}$
2	$\frac{116}{15}$
4	$\frac{92}{15}$

Question ID afea4206

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: afea4206

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 7b1c35e3

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 7b1c35e3

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 c717a869

Assessment	Test	Domain	Skill	Difficulty
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ID: c717a869

x	y
18	130
23	160
26	178



For line h , the table shows three values of x and their corresponding values of y . Line k is the result of translating line h down 5 units in the xy -plane. What is the x -intercept of line k ?

- A. $(-\frac{26}{3}, 0)$
- B. $(-\frac{9}{2}, 0)$
- C. $(-\frac{11}{3}, 0)$
- D. $(-\frac{17}{6}, 0)$

Question ID 6b5c6ffa

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: 6b5c6ffa

x	y
k	13
$k + 7$	-15



The table gives the coordinates of two points on a line in the xy -plane. The y -intercept of the line is $(k - 5, b)$, where k and b are constants. What is the value of b ?

Question ID b1182278

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Algebra	Linear equations in two variables	<div><div></div><div></div><div></div></div>

ID: b1182278

The graph of $9x - 10y = 19$ is translated down 4 units in the xy -plane. What is the x -coordinate of the x -intercept of the resulting graph?