Question ID 6ee5222e

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

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

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

A.

x	y
1	$\frac{113}{20}$
2	$\frac{101}{20}$
4	$\frac{77}{20}$

B.

x	y
1	$\frac{47}{5}$
2	$\frac{44}{5}$
4	$\frac{38}{5}$

C.

x	y
1	$\frac{148}{15}$
2	$\frac{136}{15}$
4	$\frac{112}{15}$

D.

x	y
1	$\frac{128}{15}$
2	$\frac{116}{15}$
4	$\frac{92}{15}$

Question ID 252d6b8a

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

$$5x + 7y = 1$$
$$ax + by = 1$$

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 900234f1

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

$$5G + 45R = 380$$

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 e40b7bdc

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

ID: e40b7bdc

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 dcdceeae

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

ID: dcdceeae

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 1cc52a1f

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

ID: 1cc52a1f

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 beb54560

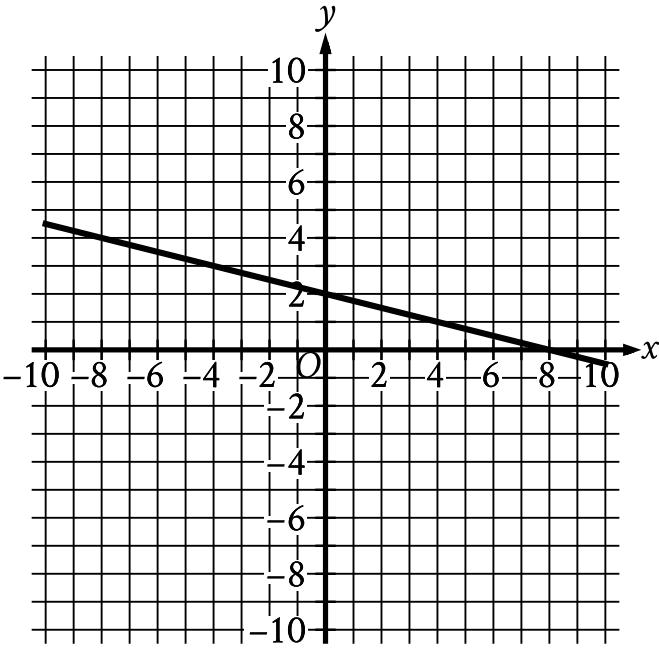| Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Hard

ID: beb54560

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 a8e43ae3

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

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 c73c84cc

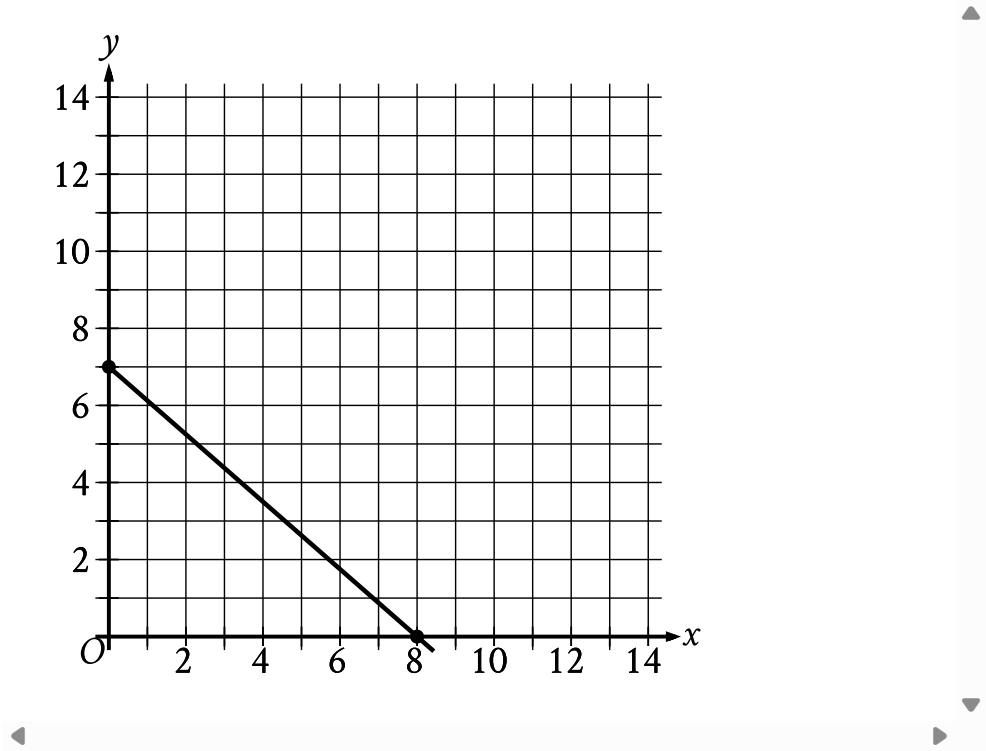| Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear equations in two variables	Hard

ID: c73c84cc

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?

Question ID 35978b89

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

ID: 35978b89

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 9a67367f

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

ID: 9a67367f

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 95cc0b50

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

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 e4db4454

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

ID: e4db4454

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 0e1dbc1d

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

ID: 0e1dbc1d

Line ℓ is defined by $3y + 12x = 5$. Line n is perpendicular to line ℓ in the *xy*-plane. What is the slope of line n?

Question ID 1ad71c23

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

ID: 1ad71c23

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 $\left(\frac{1}{7}, a\right)$. What is the value of a?

A. $-\frac{4}{11}$

B. $-\frac{4}{77}$

C. $\frac{4}{7}$

D. $\frac{172}{7}$

Question ID 8d7fb037

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

ID: 8d7fb037

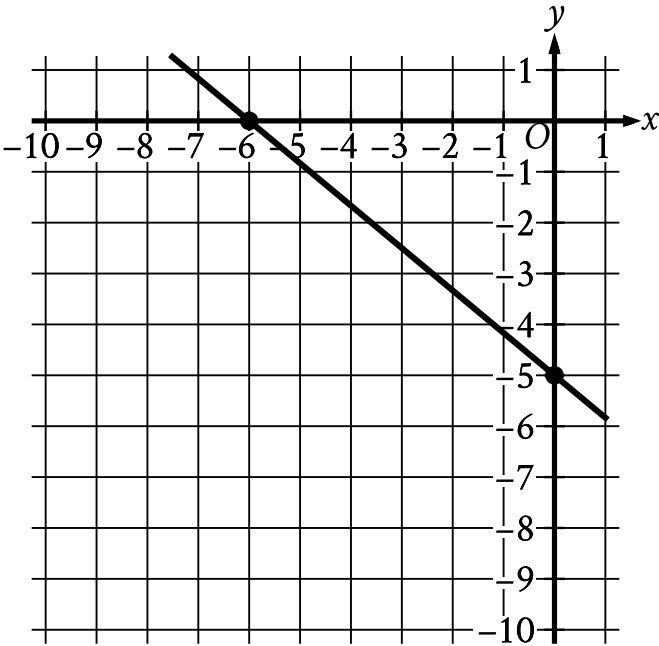| x	y
18	130
23	160
26	178

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. $\left(-\frac{26}{3}, 0 \right)$

B. $\left(-\frac{9}{2}, 0 \right)$

C. $\left(-\frac{11}{3}, 0 \right)$
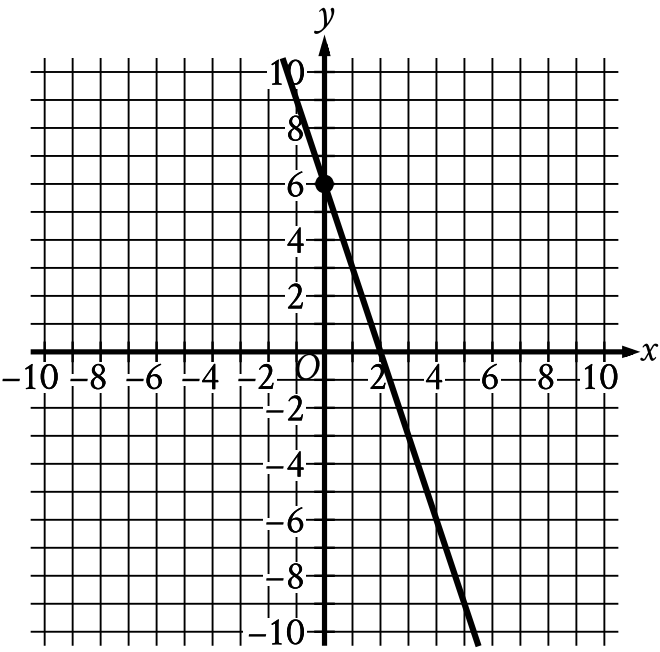
D. $\left(-\frac{17}{6}, 0 \right)$

Line k is shown in the xy-plane. Line j (not shown) is perpendicular to line k. What is the slope of line j?

Question ID 8a1fb433

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

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 ec0fe2b2

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

ID: ec0fe2b2

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 228bd68a

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

ID: 228bd68a

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 a83cf688

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

ID: a83cf688

x	y
$-2s$	24
$-s$	21
s	15

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

A. $sx + 3y = 18s$

B. $3x + sy = 18s$

C. $3x + sy = 18$

D. $sx + 3y = 18$