Question ID 002dba45

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

ID: 002dba45

2.1

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 9c7741c6

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

ID: 9c7741c6

2.2

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 d62ad380

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

ID: d62ad380 2.3

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 431c3038

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

ID: 431c3038

2.4

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 265f2a53

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

ID: 265f2a53

2.5

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 f81a0503

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

ID: f81a0503

2.6

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 28c2253f

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

ID: 28c2253f 2.7

Characteristics for Rock Types

Rock type	Weight per volume (lb/ft^3)	Cost per pound
Basalt	180	$0.18
Granite	165	$0.09
Limestone	120	$0.03
Sandstone	135	$0.22

A city is planning to build a rock retaining wall, a monument, and a garden in a park. The table above shows four rock types that will be considered for use in the project. Also shown for each rock type is its weight per volume, in pounds per cubic foot (lb/ft^3), and the cost per pound, in dollars. Only basalt, granite, and limestone will be used in the garden. The rocks in the garden will have a total weight of 1,000 pounds. If 330 pounds of granite is used, which of the following equations could show the relationship between the amounts, x and y, in ft^3, for each of the other rock types used?

A. $165x + 180y = 670$

B. $165x + 120y = 1{,}000$

C. $120x + 180y = 670$

D. $120x + 180y = 1{,}000$

Question ID 2e1a7f66

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

ID: 2e1a7f66

2.8

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 6f6dfe3e

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

ID: 6f6dfe3e

2.9

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 9ed4c1a2

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

ID: 9ed4c1a2

2.10

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

Question ID fb43b85f

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

ID: fb43b85f

2.11

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

Question ID 400798d6

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

ID: 400798d6

2.12

$2x + y = 37$

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 ca452900

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

ID: ca452900

2.13

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

Question ID 62ef6f73

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

ID: 62ef6f73

2.14

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 92aa3a94

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

ID: 92aa3a94

2.15

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