SAT Math

Linear Equations in Two Variables 1

Question #	ID

1.1 ee846db7

A store sells two different-sized containers of a certain Greek yogurt. The store's sales of this Greek yogurt totaled $1{,}277.94$ dollars last month. The equation $5.48x + 7.30y = 1{,}277.94$ 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, which of the following represents the price, in dollars, of each smaller container?

A. 5.48

B. $7.30y$

C. 7.30

D. $5.48x$

1.2 5b8a8475

Line k is defined by $y = 3x + 15$. Line j is perpendicular to line k in the *xy*-plane. What is the slope of line j?

A. $-\frac{1}{3}$

B. $-\frac{1}{12}$

C. $-\frac{1}{18}$

D. $-\frac{1}{45}$

1.3 b23bba4c

$$3a+4b=25$$

A shipping company charged a customer $25 to ship some small boxes and some large boxes. The equation above represents the relationship between *a*, the number of small boxes, and *b*, the number of large boxes, the customer had shipped. If the customer had 3 small boxes shipped, how many large boxes were shipped?

A. 3

B. 4

C. 5

D. 6

1.4 87322577

$$x+y=75$$

The equation above relates the number of minutes, *x*, Maria spends running each day and the number of minutes, *y*, she spends biking each day. In the equation, what does the number 75 represent?

A. The number of minutes spent running each day

B. The number of minutes spent biking each day

C. The total number of minutes spent running and biking each day

D. The number of minutes spent biking for each minute spent running

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1.5 c6b151d4

A total of 364 paper straws of equal length were used to construct two types of polygons: triangles and rectangles. The triangles and rectangles were constructed so that no two polygons had a common side. The equation $3x + 4y = 364$ represents this situation, where x is the number of triangles constructed and y is the number of rectangles constructed. What is the best interpretation of $(x, y) = (24, 73)$ in this context?

A. If 24 triangles were constructed, then 73 rectangles were constructed.

B. If 24 triangles were constructed, then 73 paper straws were used.

C. If 73 triangles were constructed, then 24 rectangles were constructed.

D. If 73 triangles were constructed, then 24 paper straws were used.

1.6 8c98c834

The equation $y = 0.1x$ models the relationship between the number of different pieces of music a certain pianist practices, *y*, during an *x*-minute practice session. How many pieces did the pianist practice if the session lasted 30 minutes?

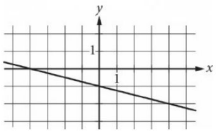
A. 1

B. 3

C. 10

D. 30

1.7 b2845d88



Which of the following is an equation of the graph shown in the *xy*-plane above?

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

B. $y = -x - 4$

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

D. $y = -4x - 1$

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1.8 b450ab03

An employee at a restaurant prepares sandwiches and salads. It takes the employee 1.5 minutes to prepare a sandwich and 1.9 minutes to prepare a salad. The employee spends a total of 46.1 minutes preparing x sandwiches and y salads. Which equation represents this situation?

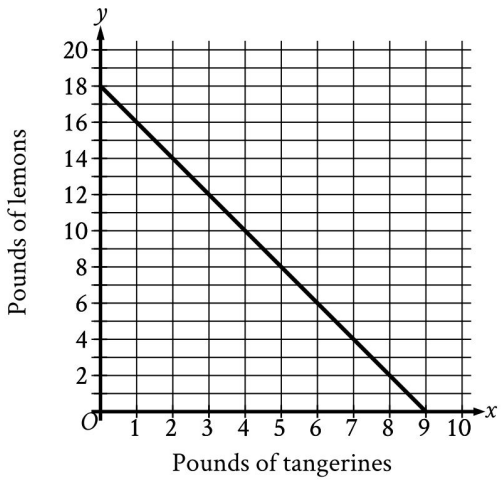
A. $1.9x + 1.5y = 46.1$

B. $1.5x + 1.9y = 46.1$

C. $x + y = 46.1$

D. $30.7x + 24.3y = 46.1$

1.9 8368afd1



The graph shows the possible combinations of the number of pounds of tangerines and lemons that could be purchased for $\$18$ at a certain store. If Melvin purchased lemons and 4 pounds of tangerines for a total of $\$18$, how many pounds of lemons did he purchase?

A. 7

B. 10

C. 14

D. 16

1.10 8adf1335

A city's total expense budget for one year was *x* million dollars. The city budgeted *y* million dollars for departmental expenses and 201 million dollars for all other expenses. Which of the following represents the relationship between *x* and *y* in this context?

A. $x + y = 201$

B. $x - y = 201$

C. $2x - y = 201$

D. $y - x = 201$

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1.11 dd797fe2

$4x+3y=24$

Mario purchased 4 binders that cost x dollars each and 3 notebooks that cost y dollars each. If the given equation represents this situation, which of the following is the best interpretation of 24 in this context?

A. The total cost, in dollars, for all binders purchased

B. The total cost, in dollars, for all notebooks purchased

C. The total cost, in dollars, for all binders and notebooks purchased

D. The difference in the total cost, in dollars, between the number of binders and notebooks purchased

1.12 789975b7

A gardener buys two kinds of fertilizer. Fertilizer A contains 60% filler materials by weight and Fertilizer B contains 40% filler materials by weight. Together, the fertilizers bought by the gardener contain a total of 240 pounds of filler materials. Which equation models this relationship, where x is the number of pounds of Fertilizer A and y is the number of pounds of Fertilizer B?

A. $0.4x+0.6y=240$

B. $0.6x+0.4y=240$

C. $40x+60y=240$

D. $60x+40y=240$

1.13 2554b413

In the xy-plane, a line has a slope of 6 and passes through the point $(0,8)$.

Which of the following is an equation of this line?

A. $y=6x+8$

B. $y=6x+48$

C. $y=8x+6$

D. $y=8x+48$

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1.14 52a8ef85

The equation $40x + 20y = 160$ represents the number of sweaters, x, and number of shirts, y, that Yesenia purchased for $\$160$. If Yesenia purchased 2 sweaters, how many shirts did she purchase?

A. 3

B. 4

C. 8

D. 40

1.15 dfa45424

Tony spends $80 per month on public transportation. A 10-ride pass costs $12.50, and a single-ride pass costs $1.50. If g represents the number of 10-ride passes Tony buys in a month and t represents the number of single-ride passes Tony buys in a month, which of the following equations best represents the relationship between g and t ?

A. $g + t = 80$

B. $g + t = 1.50 + 12.50$

C. $1.50g + 12.50t = 80$

D. $12.50g + 1.50t = 80$

1.16 520e6f5b

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. The equation $0.03(120w) + 0.18(180z) + 3{,}385.80 = 7{,}576.20$ gives the total cost, in dollars, of the rocks used in the project in terms of the number of ft^3 of limestone, w, and the number of ft^3 of basalt, z. All four rock types are used in the project. Which of the following is the best interpretation of 3,385.80 in this context?

A. The cost of the granite and sandstone needed for the project

B. The cost of the basalt and limestone needed for the project

C. The cost of the basalt needed for the project

D. The cost of the sandstone needed for the project

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1.17 b2de69bd

x	y
1	5
2	7
3	9
4	11

The table above shows some pairs of x values and y values. Which of the following equations could represent the relationship between x and y ?

A. $y = 2x + 3$

B. $y = 3x - 2$

C. $y = 4x - 1$

D. $y = 5x$

1.18 c5479c1a

A shipment consists of 5-pound boxes and 10-pound boxes with a total weight of 220 pounds. There are 13 10-pound boxes in the shipment. How many 5-pound boxes are in the shipment?

A. 5

B. 10

C. 13

D. 18

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Linear Equations in Two Variables 1

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1.19 1efd8202

$$y = 70x + 8$$

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

A.

x	y
0	8
2	148
4	288

B.

x	y
0	70
2	78
4	86

C.

x	y
0	70
2	140
4	280

D.

x	y
0	8
2	132
4	272

1.20 b9839f9e

$$F = 2.50x + 7.00y$$

In the equation above, F represents the total amount of money, in dollars, a food truck charges for x drinks and y salads. The price, in dollars, of each drink is the same, and the price, in dollars, of each salad is the same. Which of the following is the best interpretation for the number 7.00 in this context?

A. The price, in dollars, of one drink

B. The price, in dollars, of one salad

C. The number of drinks bought during the day

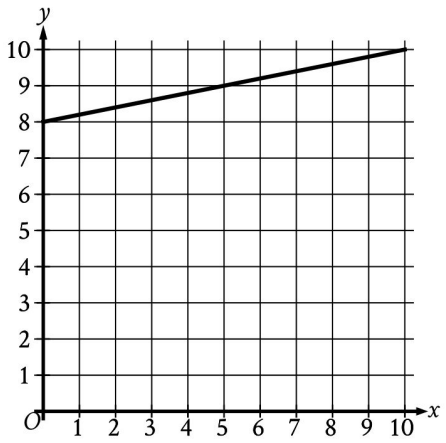
D. The number of salads bought during the day

SAT Math

Linear Equations in Two Variables 1

Question # **ID**

1.21 f40552a9



What is the *y*-intercept of the line graphed?

A. $(0, -8)$

B. $(0, -\frac{1}{8})$

C. $(0, 0)$

D. $(0, 8)$

1.22 12ae3452

The equation $46 = 2a + 2b$ gives the relationship between the side lengths a and b of a certain parallelogram. If $a = 9$, what is the value of b?

1.23 8b2a2a63

The *y*-intercept of the graph of $y = -6x - 32$ in the *xy*-plane is $(0, y)$. What is the value of y?

1.24 8da536c6

In 2010, a swim club had a total of 35 swimmers, each classified as either advanced or intermediate. From 2010 to 2020, the number of advanced swimmers in the club increased by approximately 53%, and the number of intermediate swimmers in the club increased by approximately 44%. The total number of swimmers in the club increased by approximately 49%. Which equation best represents this situation, where a represents the number of advanced swimmers in the club in 2010 and b represents the number of intermediate swimmers in the club in 2010?

A. $1.53a + 1.49b = 35(1.44)$

B. $1.49a + 0.53b = 35(1.44)$

C. $1.53a + 1.44b = 35(1.49)$

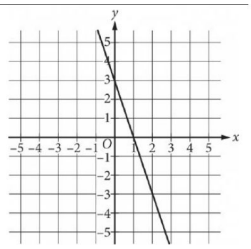
D. $1.44a + 1.53b = 35(1.49)$

SAT Math

Linear Equations in Two Variables 1

Question # **ID**

1.25 8a1544f1



What is the equation of the line shown in the *xy*-plane above?

A. $y = 3x - 3$

B. $y = -3x + 3$

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

D. $y = -\frac{1}{3}x + 3$

1.26 535fa6e6

Davio bought some potatoes and celery. The potatoes cost $\$0.69$ per pound, and the celery cost $\$0.99$ per pound. If Davio spent $\$5.34$ in total and bought twice as many pounds of celery as pounds of potatoes, how many pounds of celery did Davio buy?

A. 2

B. 2.5

C. 2.67

D. 4

1.27 39571c77

Naomi bought both rabbit snails and nerite snails for a total of $\$52$. Each rabbit snail costs $\$8$ and each nerite snail costs $\$6$. If Naomi bought 2 nerite snails, how many rabbit snails did she buy?

A. 5

B. 12

C. 14

D. 50

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1.28 1fe778dc

A line in the *xy*-plane has a slope of $-\frac{1}{2}$ and passes through the point $(0, 3)$. Which equation represents this line?

A. $y = -\frac{1}{2}x - 3$

B. $y = -\frac{1}{2}x + 3$

C. $y = \frac{1}{2}x - 3$

D. $y = \frac{1}{2}x + 3$

1.29 6a12efbb

The equation $46 = 2x + 2y$ gives the perimeter of a rectangular rug that has length x, in feet, and width y, in feet. The width of the rug is 8 feet. What is the length, in feet, of the rug?

1.30 d1042cf8

A food truck buys forks for $\$0.04$ each and plates for $\$0.48$ each. The total cost of x forks and y plates is $\$661.76$. Which equation represents this situation?

A. $0.48x - 0.04y = 661.76$

B. $0.04x - 0.48y = 661.76$

C. $0.48x + 0.04y = 661.76$

D. $0.04x + 0.48y = 661.76$

1.31 029c2dc2

A teacher is creating an assignment worth 70 points. The assignment will consist of questions worth 1 point and questions worth 3 points. Which equation represents this situation, where x represents the number of 1-point questions and y represents the number of 3-point questions?

A. $4xy = 70$

B. $4(x + y) = 70$

C. $3x + y = 70$

D. $x + 3y = 70$

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1.32 39617468

$$x + y = 350$$

The given equation relates the total number of maple trees, x, and the total number of birch trees, y, planted in a 14-acre forest preserve. If 245 maple trees were planted in the forest preserve, how many birch trees were planted in the forest preserve?

A. 14

B. 25

C. 105

D. 245

1.33 cea27ab2

$$7x - 4y = -84$$

For the given equation, which table gives three values of x and their corresponding values of y?

A.

x	0	4	8
y	21	28	35

B.

x	0	4	8
y	35	28	21

C.

x	21	28	35
y	0	4	8

D.

x	21	28	35
y	8	4	0

1.34 4d8ccb96

A chemist studying the impact of salt on a process mixes x kilograms of a low-salt mixture, which is 2% salt by weight, with y kilograms of a high-salt mixture, which is 96% salt by weight, to create 24 kilograms of a mixture that is 4% salt by weight. Which equation represents this situation?

A. $0.96x + 0.02y = (0.04)(24)$

B. $0.02x + 0.96y = (0.04)(24)$

C. $0.96x + 0.02y = 24$

D. $0.02x + 0.96y = 24$