Question ID 769dc33f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 769dc33f

x	$g(x)$
1	54
2	51
3	48
4	45

For the linear function g, the table shows four values of x and their corresponding values of $g(x)$. The function can be written as $g(x) = mx + b$, where m and b are constants. What is the value of b?

A. 3

B. 27

C. 54

D. 57

Question ID cf175155

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: cf175155

Caleb used juice to make popsicles. The function $f(x) = -5x + 30$ approximates the volume, in fluid ounces, of juice Caleb had remaining after making x popsicles. Which statement is the best interpretation of the *y*-intercept of the graph of $y = f(x)$ in the *xy*-plane in this context?

A. Caleb used approximately 5 fluid ounces of juice for each popsicle.

B. Caleb had approximately 5 fluid ounces of juice when he began to make the popsicles.

C. Caleb had approximately 30 fluid ounces of juice when he began to make the popsicles.

D. Caleb used approximately 30 fluid ounces of juice for each popsicle.

Question ID 260c8cc7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 260c8cc7

$$g(m) = -0.05m + 12.1$$

The given function g models the number of gallons of gasoline that remains from a full gas tank in a car after driving m miles. According to the model, about how many gallons of gasoline are used to drive each mile?

A. 0.05

B. 12.1

C. 20

D. 242.0

Question ID 087283ab

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 087283ab

In the *xy*-plane, the graph of the linear function f contains the points $(0, 2)$ and $(8, 34)$. Which equation defines f, where $y = f(x)$?

A. $f(x) = 2x + 42$

B. $f(x) = 32x + 36$

C. $f(x) = 4x + 2$

D. $f(x) = 8x + 2$

Question ID 88de8eeb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 88de8eeb

For groups of 25 or more people, a museum charges $\$21$ per person for the first 25 people and $\$14$ for each additional person. Which function f gives the total charge, in dollars, for a tour group with n people, where $n \geq 25$?

A. $f(n) = 14n + 175$

B. $f(n) = 14n + 525$

C. $f(n) = 35n - 350$

D. $f(n) = 14n + 21$

Question ID ec1ee886

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: ec1ee886

The function f is defined by $f(x) = -9x + 9$. What is the y-coordinate of the y-intercept of the graph of $y = f(x)$ in the xy-plane?

Question ID 60ae7d59

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 60ae7d59

The cost of renting a large canopy tent for up to 10 days is $\$430$ for the first day and $\$215$ for each additional day. Which of the following equations gives the cost y, in dollars, of renting the tent for x days, where x is a positive integer and $x \leq 10$?

A. $y = 215x + 215$

B. $y = 430x - 215$

C. $y = 430x + 215$

D. $y = 215x + 430$

Question ID 523437f0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 523437f0

The function h is defined by $h(x) = 4x + 28$. The graph of $y = h(x)$ 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 $a + b$?

A. 21

B. 28

C. 32

D. 35

Question ID 110d5a9a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 110d5a9a

x	10	15	20	25
$f(x)$	82	137	192	247

The table shows four values of x and their corresponding values of $f(x)$. There is a linear relationship between x and $f(x)$ that is defined by the equation $f(x) = mx - 28$, where m is a constant. What is the value of m?

Question ID c88c8eeb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: c88c8eeb

$$f(x) = 39$$

For the given linear function f, which table gives three values of x and their corresponding values of $f(x)$?

A.

x	$f(x)$
0	0
1	0
2	0

B.

x	$f(x)$
0	39
1	39
2	39

C.

x	$f(x)$
0	0
1	39
2	78

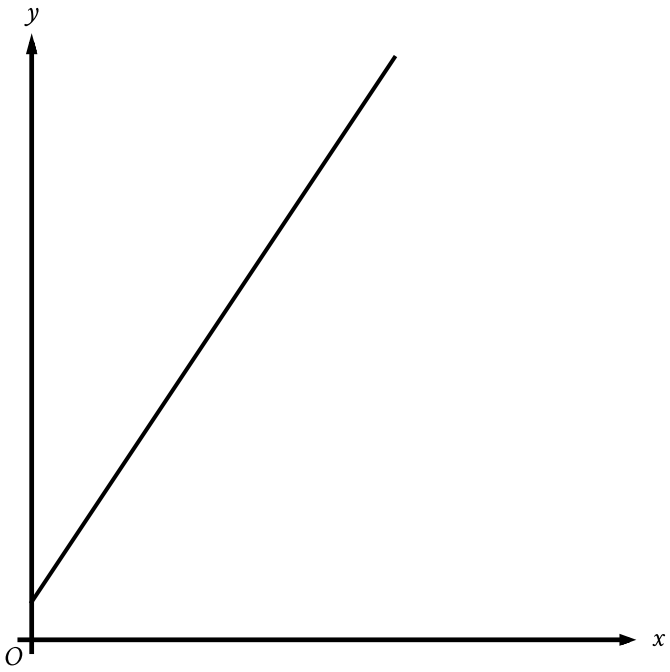
D.

x	$f(x)$
0	39
1	0
2	-39

Question ID 6c6d3af5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 6c6d3af5



The graph represents the total charge, in dollars, by an electrician for x hours of work. The electrician charges a onetime fee plus an hourly rate. What is the best interpretation of the slope of the graph?

A. The electrician's hourly rate

B. The electrician's onetime fee

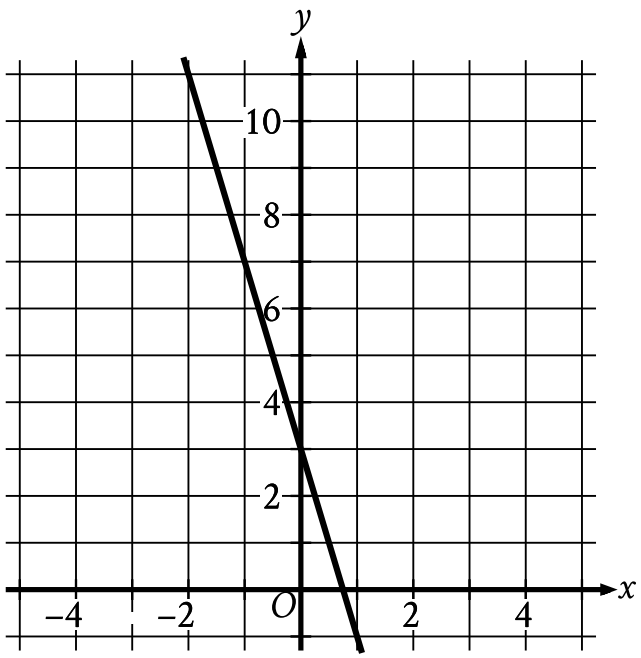
C. The maximum amount that the electrician charges

D. The total amount that the electrician charges

Question ID 82b33e31

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 82b33e31



The graph of the linear function $y = f(x) + 19$ is shown. If c and d are positive constants, which equation could define f?

A. $f(x) = -d - cx$

B. $f(x) = d - cx$

C. $f(x) = -d + cx$

D. $f(x) = d + cx$

Question ID 7d304f81

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 7d304f81

If $f(x) = x + 7$ and $g(x) = 7x$, what is the value of $4f(2) - g(2)$?

A. -5

B. 1

C. 22

D. 28

Question ID 9bbbda63

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 9bbbda63

x	$f(x)$
1	-64
2	0
3	64

For the linear function f, the table shows three values of x and their corresponding values of $f(x)$. Function f is defined by $f(x) = ax + b$, where a and b are constants. What is the value of $a - b$?

A. -64

B. 62

C. 128

D. 192

Question ID 19312a4a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 19312a4a

In the linear function f, $f(0) = 8$ and $f(1) = 12$. Which equation defines f?

A. $f(x) = 12x + 8$

B. $f(x) = 4x$

C. $f(x) = 4x + 12$

D. $f(x) = 4x + 8$

Question ID 0fd74d8c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 0fd74d8c

$$F(x) = \frac{9}{5}(x - 273.15) + 32$$

The function F gives the temperature, in degrees Fahrenheit, that corresponds to a temperature of x kelvins. If a temperature increased by 2.10 kelvins, by how much did the temperature increase, in degrees Fahrenheit?

A. 3.78

B. 35.78

C. 487.89

D. 519.89

Question ID 48399aad

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 48399aad

Kaylani used fabric measuring 5 yards in length to make each suit for a men's choir. The relationship between the number of suits that Kaylani made, x, and the total length of fabric that she purchased y, in yards, is represented by the equation $y - 5x = 6$. What is the best interpretation of 6 in this context?

A. Kaylani made 6 suits.

B. Kaylani purchased a total of 6 yards of fabric.

C. Kaylani used a total of 6 yards of fabric to make the suits.

D. Kaylani purchased 6 yards more fabric than she used to make the suits.

Question ID fed23a76

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: fed23a76

The function f is defined by $f(x) = \frac{9}{7}x + \frac{8}{7}$. For what value of x does $f(x) = 5$?

Question ID 106a2e0d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 106a2e0d

The functions f and g are defined as $f(x) = \frac{1}{4}x - 9$ and $g(x) = \frac{3}{4}x + 21$. If the function h is defined as $h(x) = f(x) + g(x)$, what is the *x*-coordinate of the *x*-intercept of the graph of $y = h(x)$ in the *xy*-plane?

Question ID c82bbc3c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: c82bbc3c

The function f is defined by $f(x) = 7x - 84$. What is the *x*-intercept of the graph of $y = f(x)$ in the *xy*-plane?

A. $(-12, 0)$

B. $(-7, 0)$

C. $(7, 0)$

D. $(12, 0)$

Question ID 48a16149

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 48a16149

The cost of renting a backhoe for up to 10 days is $\$270$ for the first day and $\$135$ for each additional day. Which of the following equations gives the cost y, in dollars, of renting the backhoe for x days, where x is a positive integer and $x \leq 10$?

A. $y = 270x - 135$

B. $y = 270x + 135$

C. $y = 135x + 270$

D. $y = 135x + 135$

Question ID 54a26a52

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 54a26a52

$$f(x) = 2x + 3$$

For the given function f, the graph of $y = f(x)$ in the *xy*-plane is parallel to line j. What is the slope of line j?

Question ID 7231c6a5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 7231c6a5

$$j(x) = mx + 144$$

For the linear function j, m is a constant and $j(12) = 18$. What is the value of $j(10)$?

Question ID 9125e98c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 9125e98c

$$f(x) = 2x + 244$$

The given function f represents the perimeter, in $\textbf{centimeters}$ $(\textbf{cm})$, of a rectangle with a length of x $\textbf{cm}$ and a fixed width. What is the width, in $\textbf{cm}$, of the rectangle?

A. 2

B. 122

C. 244

D. 488

Question ID d2c01cfd

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: d2c01cfd

The equation $h = \frac{9(v-273.15)}{5} + 32$ gives the corresponding temperature h, in degrees Fahrenheit, of any substance that has a temperature of v kelvins, where $v > 0$. If a substance has a temperature of 467.33 degrees Fahrenheit, what is the corresponding temperature, in kelvins, of this substance?

Question ID 9bf6ba98

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 9bf6ba98

A model predicts that a certain animal weighed 241 pounds when it was born and that the animal gained 3 pounds per day in its first year of life. This model is defined by an equation in the form $f(x) = a + bx$, where $f(x)$ is the predicted weight, in pounds, of the animal x days after it was born, and a and b are constants. What is the value of a?

Question ID 0d38cc32

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 0d38cc32

The function f is defined by $f(x) = \frac{x+15}{5}$, and $f(a) = 10$, where a is a constant. What is the value of a?

A. 5

B. 10

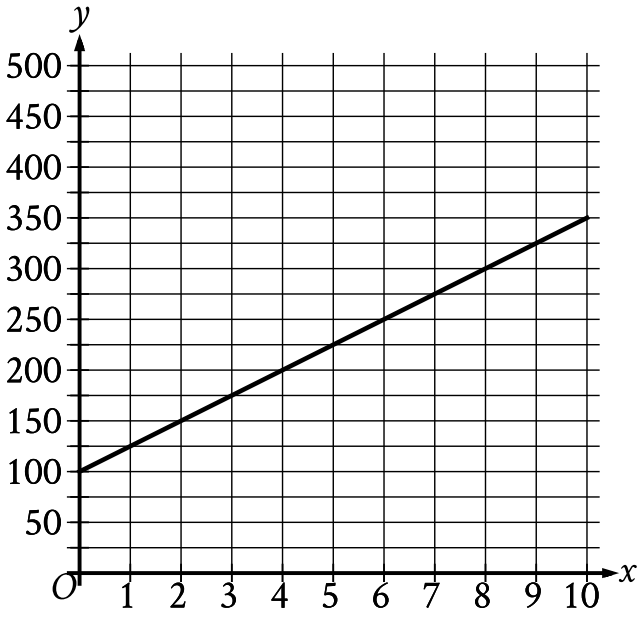
C. 35

D. 65

Question ID 0e08f8e9

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 0e08f8e9



The graph of the function f, where $y = f(x)$, gives the total cost y, in dollars, for a certain video game system and x games. What is the best interpretation of the slope of the graph in this context?

A. Each game costs $\$25$.

B. The video game system costs $\$100$.

C. The video game system costs $\$25$.

D. Each game costs $\$100$.

Question ID 3b65a247

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 3b65a247

$$f(x) = 45x + 600$$

The function f gives the monthly fee $f(x)$, in dollars, a facility charges to keep x crates in storage. What is the monthly fee, in dollars, the facility charges to keep 50 crates in storage?

Question ID edbc90e5

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: edbc90e5

The pressure exerted on a scuba diver at sea level is 14.70 pounds per square inch (psi). For each foot the scuba diver descends below sea level, the pressure exerted on the scuba diver increases by 0.44 psi. What is the total pressure, in psi, exerted on the scuba diver at 105 feet below sea level?

A. 60.90

B. 31.50

C. 14.70

D. 0.44

Question ID 7e946c43

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 7e946c43

In the linear function h, $h(28) = 15$ and $h(26) = 22$. Which equation defines h?

A. $h(x) = -\frac{2}{7}x + 23$

B. $h(x) = -\frac{2}{7}x + 113$

C. $h(x) = -\frac{7}{2}x + 23$

D. $h(x) = -\frac{7}{2}x + 113$

Question ID c31c23f7

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: c31c23f7

The table gives the number of hours, h, of labor and a plumber's total charge $f(h)$, in dollars, for two different jobs.

h	$f(h)$
1	155
3	285

There is a linear relationship between h and $f(h)$. Which equation represents this relationship?

A. $f(h) = 25h + 130$

B. $f(h) = 130h + 25$

C. $f(h) = 65h + 90$

D. $f(h) = 90h + 65$

Question ID 7e74c4fb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 7e74c4fb

One gallon of paint will cover 220 square feet of a surface. A room has a total wall area of w square feet. Which equation represents the total amount of paint P, in gallons, needed to paint the walls of the room twice?

A. $P = \frac{w}{110}$

B. $P = 440w$

C. $P = \frac{w}{220}$

D. $P = 220w$

Question ID 936b2fd4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 936b2fd4

A linear function f gives a company's profit, in dollars, for selling x items. The company's profit is $\$220$ when it sells 8 items, and its profit is $\$320$ when it sells 10 items. Which equation defines f?

A. $f(x) = 150x - 320$

B. $f(x) = 32x$

C. $f(x) = 50x - 10x$

D. $f(x) = 50x - 180$

Question ID 88e60b4c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 88e60b4c

The relationship between two variables, x and y, is linear. For every increase in the value of x by 1, the value of y increases by 8. When the value of x is 2, the value of y is 18. Which equation represents this relationship?

A. $y = 2x + 18$

B. $y = 2x + 8$

C. $y = 8x + 2$

D. $y = 3x + 26$

Question ID c1aad368

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: c1aad368

The cost of renting a carpet cleaner is $\$52$ for the first day and $\$26$ for each additional day. Which of the following functions gives the cost $C(d)$, in dollars, of renting the carpet cleaner for d days, where d is a positive integer?

A. $C(d) = 26d + 26$

B. $C(d) = 26d + 52$

C. $C(d) = 52d - 26$

D. $C(d) = 52d + 78$

Question ID 7d6cb142

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 7d6cb142

For the linear function g, the graph of $y = g(x)$ in the *xy*-plane has a slope of 2 and passes through the point $(1, 14)$. Which equation defines g?

A. $g(x) = 2x$

B. $g(x) = 2x + 2$

C. $g(x) = 2x + 12$

D. $g(x) = 2x + 14$

Question ID d0fc9d47

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: d0fc9d47

Distance (kilometers)	Average time (minutes)
0.32	8
0.56	14
0.68	17

The table gives the average time t, in minutes, it takes Carly to travel a certain distance d, in kilometers. Which equation could represent this linear relationship?

A. $t = 4d$

B. $t = \frac{1}{25}d$

C. $t = 25d$

D. $t = \frac{1}{4}d$

Question ID da874bf4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: da874bf4

Number of cars	Maximum number of passengers and crew
3	174
5	284
10	559

The table shows the linear relationship between the number of cars, c, on a commuter train and the maximum number of passengers and crew, p, that the train can carry. Which equation represents the linear relationship between c and p?

A. $55c - p = -9$

B. $55c - p = 9$

C. $55p - c = -9$

D. $55p - c = 9$

Question ID dd3cc86f

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: dd3cc86f

x	$f(x)$
-4	0
$-\frac{19}{5}$	1
$-\frac{18}{5}$	2

For the linear function f, the table shows three values of x and their corresponding values of $f(x)$. If $h(x) = f(x) - 13$, which equation defines h?

A. $h(x) = 5x - 4$

B. $h(x) = 5x + 7$

C. $h(x) = 5x + 9$

D. $h(x) = 5x + 20$

Question ID 4b88cf78

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 4b88cf78

For the function f, $f(cx) = x - 8$ for all values of x, where c is a positive constant. If $f(2) = 35$, what is the value of c ?

Question ID 04f7e802

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 04f7e802

The function f is defined by $f(x) = 4x + k(x - 1)$, where k is a constant, and $f(5) = 32$. What is the value of $f(10)$?

Question ID 9c322a51

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 9c322a51

$$h(x) = x + b$$

For the linear function h, b is a constant and $h(0) = 45$. What is the value of b?

Question ID 58bb1320

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 58bb1320

Scientists collected fallen acorns that each housed a colony of the ant species *P. ohioensis* and analyzed each colony's structure. For any of these colonies, if the colony has x worker ants, the equation $y = 0.67x + 2.6$, where $20 \leq x \leq 110$, gives the predicted number of larvae, y, in the colony. If one of these colonies has 58 worker ants, which of the following is closest to the predicted number of larvae in the colony?

A. 41

B. 61

C. 83

D. 190

Question ID 7a1be251

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 7a1be251

The function $f(x)$ is defined as 19 more than 4 times a number x. If $y = f(x)$ is graphed in the xy-plane, what is the best interpretation of the x-intercept?

A. When $f(x) = 0$, the number is $-\frac{19}{4}$.

B. When the number is 0, $f(x) = 19$.

C. The value of $f(x)$ increases by 1 for each increase of 4 in the value of the number.

D. For each increase of 1 in the value of the number, $f(x)$ increases by 4.

Question ID e8bf6ee9

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: e8bf6ee9

x	y
-12	-45
6	45

The table shows two values of x and their corresponding values of y. The graph of the linear equation representing this relationship passes through the point $\left(\frac{1}{4},\ a\right)$. What is the value of a?

Question ID 26447f61

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 26447f61

The linear function g is defined by $g(x) = b - 15x$, where b is a constant. If $g(c + 7) = \frac{c}{4}$, where c is a constant, which of the following expressions represents the value of b?

A. $\frac{15c}{4}$

B. $\frac{19c}{4} + 7$

C. $\frac{61c}{4} + 105$

D. $15c + 105$

Question ID 707ab9fc

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 707ab9fc

The function $f(x) = 55.20 - 0.16x$ gives the estimated surface water temperature $f(x)$, in degrees Celsius, of a body of water on the $x\text{th}$ day of the year, where $220 \leq x \leq 360$. Based on the model, what is the estimated surface water temperature, in degrees Celsius, of this body of water on the 326th day of the year?

A. 55.20

B. 3.04

C. -0.16

D. -52.16

Question ID 203cc508

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 203cc508

In the *xy*-plane, the graph of the linear function f contains the points $(0, 3)$ and $(7, 31)$. Which equation defines f, where $y = f(x)$?

A. $f(x) = 28x + 34$

B. $f(x) = 3x + 38$

C. $f(x) = 4x + 3$

D. $f(x) = 7x + 3$

Question ID 531fb5d2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 531fb5d2

One gallon of stain will cover 170 square feet of a surface. A yard has a total fence area of w square feet. Which equation represents the total amount of stain S, in gallons, needed to stain the fence in this yard twice?

A. $S = \frac{w}{170}$

B. $S = 170w$

C. $S = 340w$

D. $S = \frac{w}{85}$

Question ID ec7acab0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: ec7acab0

For the linear function h, the graph of $y = h(x)$ in the *xy*-plane passes through the points $(7, 21)$ and $(9, 25)$. Which equation defines h?

A. $h(x) = \frac{1}{2}x - \frac{7}{2}$

B. $h(x) = 2x + 7$

C. $h(x) = 7x + 21$

D. $h(x) = 9x + 25$

Question ID 8504aff2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 8504aff2

$$w(t) = 300 - 4t$$

The function w models the volume of liquid, in milliliters, in a container t seconds after it begins draining from a hole at the bottom. According to the model, what is the predicted volume, in milliliters, draining from the container each second?

A. 300

B. 296

C. 75

D. 4

Question ID 815e56ab

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 815e56ab

In the *xy*-plane, line k has a slope of 5 and a *y*-intercept of $(0, -35)$. What is the *x*-coordinate of the *x*-intercept of line k?

Question ID c8f5a3c2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: c8f5a3c2

A linear model estimates the population of a city from 1991 to 2015. The model estimates the population was 57 thousand in 1991, 224 thousand in 2011, and x thousand in 2015. To the nearest whole number, what is the value of x?

Question ID 82bfd550

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 82bfd550

$$F(x) = \frac{9}{5}(x - 273.15) + 32$$

The function F gives the temperature, in degrees Fahrenheit, that corresponds to a temperature of x kelvins. If a temperature increased by 9.10 kelvins, by how much did the temperature increase, in degrees Fahrenheit?

A. 16.38

B. 48.38

C. 475.29

D. 507.29

Question ID 0522e6f0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 0522e6f0

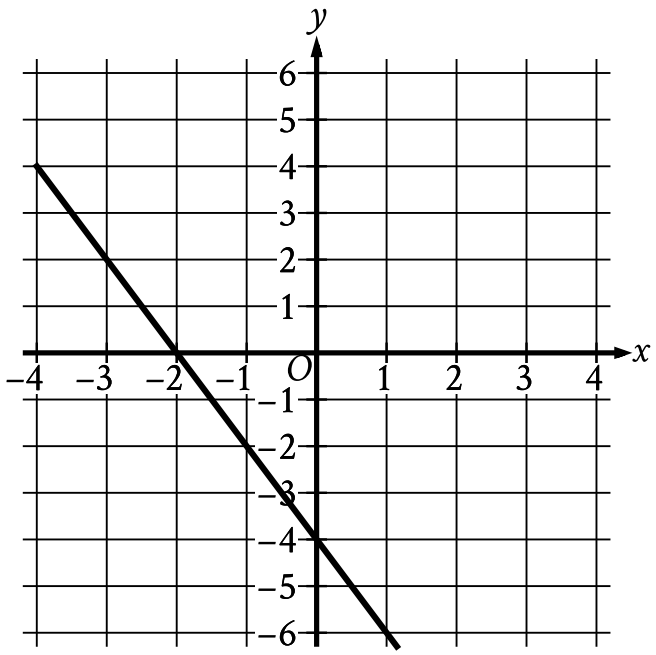
Brian saves $\frac{2}{5}$ of the $\$215$ he earns each week from his job. If Brian continues to save at this rate, how much money, in dollars, will Brian save in 9 weeks?

Question ID 3608a9d6

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 3608a9d6

The graph of $y = f(x) - 11$ is shown.



Which equation defines the linear function f?

A. $f(x) = -13x - 11$

B. $f(x) = -2x + 7$

C. $f(x) = -13x + 7$

D. $f(x) = -2x - 11$

Question ID 4c602c2e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear functions	Hard

ID: 4c602c2e

A window repair specialist charges $\$220$ for the first two hours of repair plus an hourly fee for each additional hour. The total cost for 5 hours of repair is $\$400$. Which function f gives the total cost, in dollars, for x hours of repair, where $x \geq 2$?

A. $f(x) = 60x + 100$

B. $f(x) = 60x + 220$

C. $f(x) = 80x$

D. $f(x) = 80x + 220$