

Question ID 43e69f94

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 43e69f94

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* ≤ 10**?

- A. ***y* = 270*x* − 135**
- B. ***y* = 270*x* + 135**
- C. ***y* = 135*x* + 270**
- D. ***y* = 135*x* + 135**

Question ID a3f57d54

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: a3f57d54

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 c5526332

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: c5526332

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 83a38c31

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 83a38c31

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 5cd676da

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 5cd676da

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 10df349c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 10df349c

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 68e48b4c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 68e48b4c

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 7a83c8d8

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 7a83c8d8

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 652119ce

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 652119ce

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 e1f59a4d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: e1f59a4d

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 4b0b4e54

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 4b0b4e54

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

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 9ecfa82d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 9ecfa82d

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 84877fd5

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 84877fd5

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 50821477

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 50821477

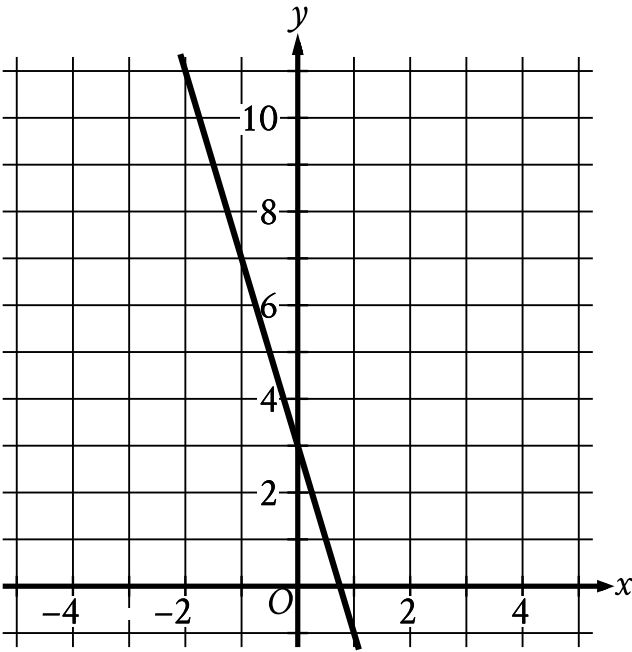
A window repair specialist charges **\$220** for the first two hours of repair plus an hourly fee for each additional hour. The total cost for **5** hours of repair is **\$400**. Which function ***f*** gives the total cost, in dollars, for ***x*** hours of repair, where ***x* ≥ 2**?

- A. ***f(x) = 60x + 100***
- B. ***f(x) = 60x + 220***
- C. ***f(x) = 80x***
- D. ***f(x) = 80x + 220***

Question ID b2f892c3

Assessment	Test	Domain	Skill	Difficulty
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ID: b2f892c3



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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 c96a90a2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: c96a90a2

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* ≤ 10**?

- A. ***y* = 215*x* + 215**
- B. ***y* = 430*x* − 215**
- C. ***y* = 430*x* + 215**
- D. ***y* = 215*x* + 430**

Question ID 6285cfe8

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 6285cfe8

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

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 60199720

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 60199720

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 e6ec10f1

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: e6ec10f1

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 ?