

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
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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?

$$\begin{aligned} 467.33 &= \frac{9(v - 273.15)}{5} + 32 \\ v &= 515 // \end{aligned}$$

Question ID c5526332

Assessment	Test	Domain	Skill	Difficulty
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ID: c5526332

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

-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
- ~~X~~ 192

Desmos $\rightarrow y = 64x - 128$
 $\begin{matrix} a & b \end{matrix}$

การไล่แทน $\rightarrow b = -128$
 $a = \frac{0 - (-64)}{2 - 1} = 64$

$a - b = 64 - (-128)$
 $= 192 //$

Question ID 83a38c31

Assessment	Test	Domain	Skill	Difficulty
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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.

y -intercept

Val of Slope

Slope

$$\begin{aligned} y &= 4x + 19 \\ 0 &= 4x + 19 \\ x &= -\frac{19}{4} \end{aligned}$$

Question ID 5cd676da

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 5cd676da

(1, 52) slope

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

Assessment	Test	Domain	Skill	Difficulty
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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. $S = \frac{w}{85}$~~

၁၇၀ ၅၂
 $170 \text{ f}^2 \rightarrow 1 \text{ g}$
 $W \rightarrow \frac{W}{170} \text{ g}$
 $2W \rightarrow \frac{2W}{170} \text{ g}$
 $= \frac{W}{85} \text{ g} //$

Question ID 68e48b4c

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 68e48b4c

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

$35 = x - 8$

$x = 43$

$cx = 2$

$43c = 2$

$c = \frac{2}{43} //$

Question ID 7a83c8d8

Assessment	Test	Domain	Skill	Difficulty
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ID: 7a83c8d8

slope ยาก โจทย์สำหรับตัดลูก

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. ~~$x = 6$~~
- B. Kaylani purchased a total of ~~6~~ yards of fabric.
- C. Kaylani used a total of ~~6~~ yards of fabric to make the suits.
- Kaylani purchased 6 yards more fabric than she used to make the suits.

$y - 5x$ โจทย์ไม่รู้จัก
6 yards

$y = 5x + 6$
y-intercept
คือมากกว่าทั้งหมด

Question ID 652119ce

Assessment	Test	Domain	Skill	Difficulty
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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
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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?

~~X~~ $P = \frac{w}{110}$

B. $P = 440w$

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

D. $P = 220w$

$\cancel{X} P$

$$\begin{aligned} 220 \text{ f}^2 &\rightarrow 1 \text{ g} \\ w \text{ f}^2 &\rightarrow \frac{w}{220} \text{ g} \\ 2w \text{ f}^2 &\rightarrow \frac{2w}{220} \text{ g} \\ &= \frac{w}{110} \text{ g} // \end{aligned}$$

Question ID 4b0b4e54

Assessment	Test	Domain	Skill	Difficulty
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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
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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. $15c + 105$

$y = b - 15x \rightarrow b = \overset{\text{แนว}}{y\text{-intercept}}$

$$\frac{c}{4} = b - 15(c + 7)$$
$$b = \frac{c}{4} + 15(c + 7)$$
$$= \frac{c + 60(c + 7)}{4}$$
$$= \frac{61c + 420}{4}$$
$$= \frac{61c}{4} + 105 //$$

ลัด ลองแทนค่า ตัดไขว้ดู

Assessment	Test	Domain	Skill	Difficulty
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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. $f(n) = 14n + 21$

~~24n~~

$$y = \underbrace{21(25)} + 14(n - 25)$$
$$= 14n + 175 //$$

Question ID 50821477

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: 50821477

(2, 220)

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. $f(x) = 60x + 100$~~ (5, 400)

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

C. $f(x) = 80x$

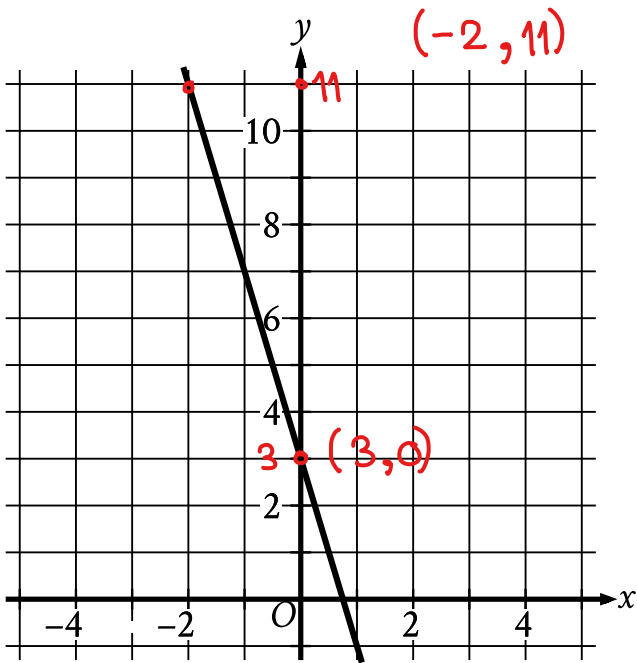
D. $f(x) = 80x + 220$

Desmos $\rightarrow y = 60x + 100 //$

Question ID b2f892c3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Algebra	Linear functions	Hard

ID: b2f892c3



Desmos $\rightarrow y = -2.2x + 3$

$y = -2.2x + 3$

$f(x) = y - 19$

$= -2.2x + 3 - 19$
 $= -2.2x - 16$

shift up

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

- ~~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 $x \leq 10$?

~~A.~~ $y = 215x + 215$

B. $y = \cancel{430}x - 215$

C. $y = \cancel{430}x + 215$

D. $y = 215x + 430$

$$y = 430 + 215(x - 1)$$
$$= 215x + 215 //$$

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?

- ~~X~~ 16.38
- B. 48.38
- C. 475.29
- D. 507.29

$x_1 = 0 \rightarrow y_1 = -459.67$

$x_2 = 9.1 \rightarrow y_2 = -443.29$

$y_2 - y_1 = 16.38 //$

จัดสมการ $y = mx + c$
แล้วใช้ Rule of 3 ตามที่กล่าว

Question ID 60199720

Assessment	Test	Domain	Skill	Difficulty
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ID: 60199720

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

Desmos $\rightarrow f(x) = 5x + 20$
 $h(x) = 5x + 20 - 13$
 $= 5x + 7 //$

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
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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 $(\frac{1}{4}, a)$. What is the value of a ?

Desmos $\rightarrow y = 5x + 15$

$a = 5\left(\frac{1}{4}\right) + 15$

$= 16.25 //$