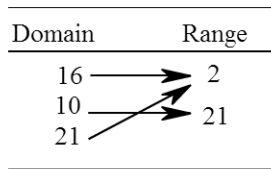


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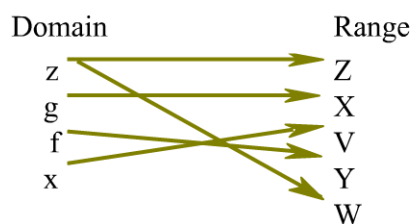
1. Determine whether the correspondence is a function.



Is this correspondence a function?

- Yes
 No

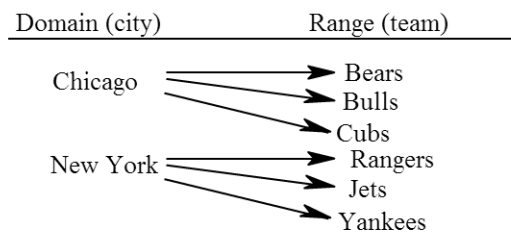
2. Determine whether the correspondence is a function.



Is this correspondence a function?

- Yes
 No

3. Determine whether the correspondence is a function.



Is this correspondence a function?

- Yes
 No

4. Find the indicated outputs for $f(x) = 5x^2 - 2x$.

$f(0) = 0$

$f(-1) = 7$

$f(2) = 16$

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5. Find the function value.

$$f(x) = x^3$$

$$f(2) = 8$$

6. The function $A(s)$ given by $A(s) = 0.285s + 59$ can be used to estimate the average age of employees of a company in the years 1981 to 2009. Let $A(s)$ be the average age of an employee, and s be the number of years since 1981; that is, $s = 0$ for 1981 and $s = 9$ for 1990. What was the average age of the employees in 2003 and in 2009?

The average age of the employees in 2003 is 65 years.
(Round to the nearest whole number as needed.)

The average age of the employees in 2009 is 67 years.
(Round to the nearest whole number as needed.)

7. The function $W(d) = 0.112d$ approximates the amount, in centimeters, of water that results from d cm of snow melting. Find the amount of water that results from snow melting from depths of 18 cm, 29 cm, and 99 cm.

18 cm of snow melting produces 2.016 cm of water.
(Simplify your answer.)

29 cm of snow melting produces 3.248 cm of water.
(Simplify your answer.)

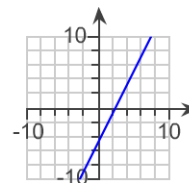
99 cm of snow melting produces 11.088 cm of water.
(Simplify your answer.)

8. Graph the function.

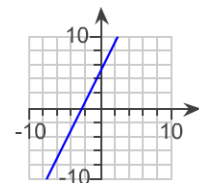
$$f(x) = -2x - 5$$

Choose the correct graph on the right.

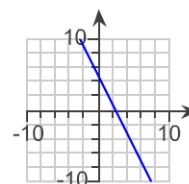
A.



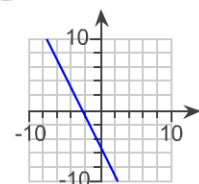
B.



C.



D.



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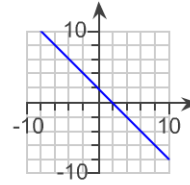
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9. Graph the function on paper.

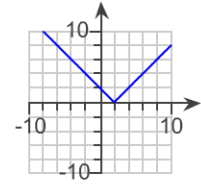
$$f(x) = 2 - |x|$$

Choose the correct graph.

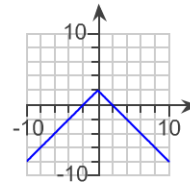
A.



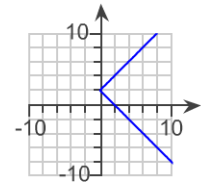
B.



C.



D.

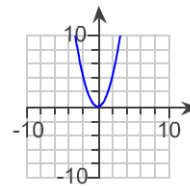


10. Graph the function.

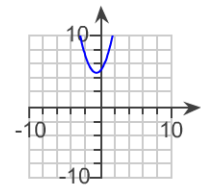
$$f(x) = x^2 - x - 5$$

Choose the correct graph.

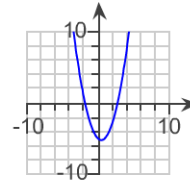
A.



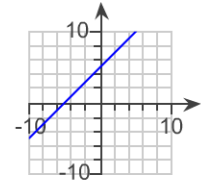
B.



C.



D.

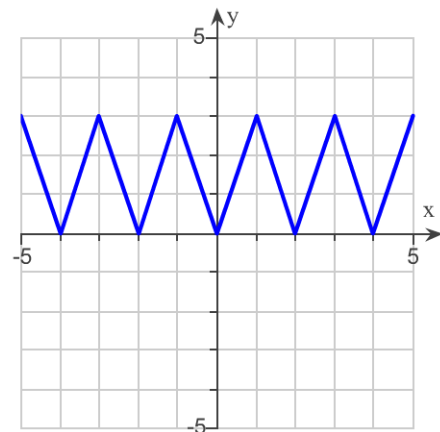


11. Determine whether the following is the graph of a function.

Is this a graph of a function?

No

Yes



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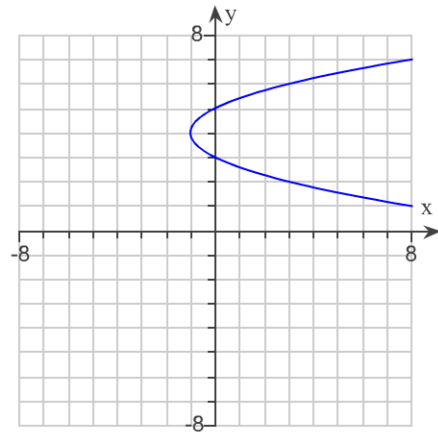
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12. Determine if the graph is a function.

Is this the graph of a function?

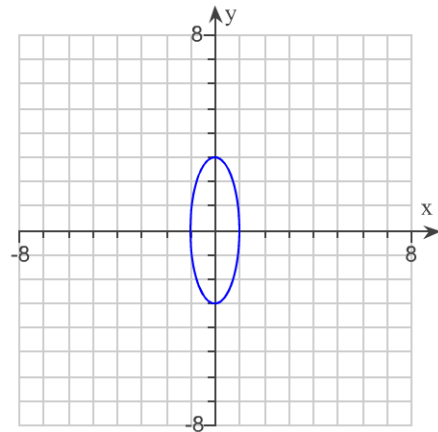
- No
 Yes



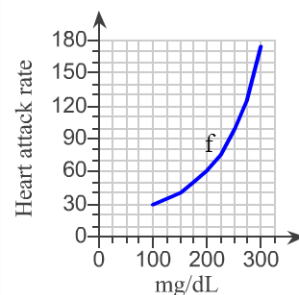
13. Determine if a graph is a function.

Is this the graph of a function?

- Yes No



14. The given graph shows the annual heart attack rate per 10,000 men as a function of blood cholesterol level. Use the graph to approximate the annual heart attack rate per 10,000 men for those whose blood cholesterol level is 150 mg/dL.



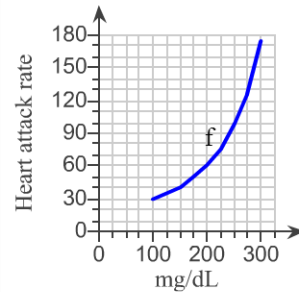
The heart attack rate for a blood cholesterol level of 150 mg/dL is 40 per 10,000 men.
(Type a whole number. Round to the nearest five heart attacks as needed.)

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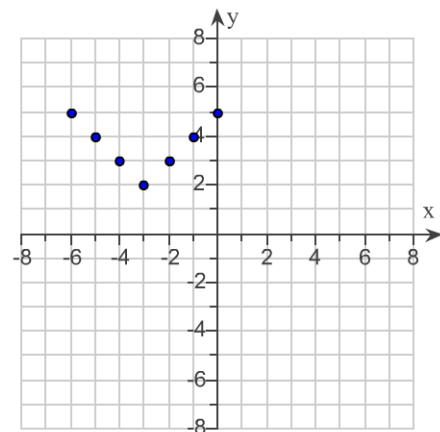
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15. The given graph shows the annual heart attack rate per 10,000 men as a function of blood cholesterol level. Use the graph to approximate the annual heart attack rate per 10,000 men for those whose blood cholesterol level is 250 mg/dL.



The heart attack rate for a blood cholesterol level of 250 mg/dL is per 10,000 men.
(Type a whole number. Round to the nearest five heart attacks as needed.)

16. For the graph, determine the value of:
- $f(-1)$
 - the domain
 - any x -values for which $f(x) = 5$
 - the range



- $f(-1) =$
 - The domain is .
 - Find any x -value(s) for which $f(x) = 5$.
 $x =$
 - The range is .
- (Use a comma to separate answers as needed.)

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17.

Use the graph to find the following.

$f(-1) = -1$

What is the domain?

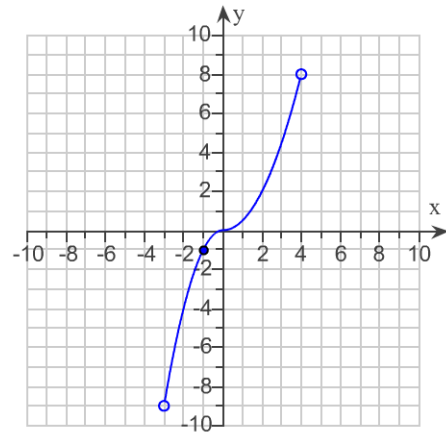
- A. $\{x \mid -10 < x < 10\}$
 B. $\{x \mid -3 < x < 4\}$
 C. $\{x \mid -9 < x < 8\}$
 D. all real numbers

What are the x-values such that $f(x) = -1$?

- A. $\{x \mid -3 < x < 4\}$
 B. \emptyset
 C. -1
 D. 3

What is the range?

- A. $\{y \mid -10 < y < 10\}$
 B. $\{y \mid -3 < y < 4\}$
 C. $\{y \mid -9 < y < 8\}$
 D. all real numbers



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18. Use the graph of the function to find the following.

$$f(-1) = -1$$

What is the domain?

- A. $\{x \mid -10 < x \leq 10\}$
 B. $\{x \mid -\infty < x \leq 0\}$
 C. All real numbers
 D. $\{x \mid 0 \leq x < \infty\}$

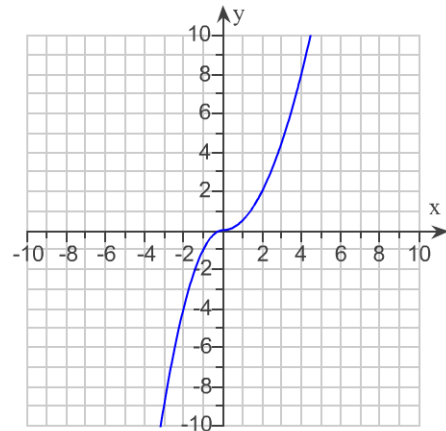
Find all x-values such that $f(x) = -1$.

$$x = -1$$

(Use a comma to separate answers as needed.)

What is the range?

- A. $\{y \mid -10 < y \leq 10\}$
 B. All real numbers
 C. $\{y \mid -\infty < y \leq 0\}$
 D. $\{y \mid 0 \leq y < \infty\}$



19. Find the domain of the function.

$$g(x) = \frac{10}{9 - 5x}$$

Choose the correct domain below.

- A. $\left\{x \mid x \text{ is a real number and } x \neq \frac{9}{5}\right\}$
 B. $\{x \mid x \text{ is a real number and } x \neq 10\}$
 C. $\left\{x \mid x \text{ is a real number and } x \geq \frac{9}{5}\right\}$
 D. $\{x \mid x \text{ is a real number and } x \neq 0\}$

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20. Find the domain.

$$f(x) = \frac{7}{|5x - 8|}$$

Choose the correct domain below.

- A. $\left\{\frac{8}{5}\right\}$
- B. $\left\{x \mid x < -\frac{8}{5} \text{ or } x > \frac{8}{5}\right\}$
- C. $\left\{x \mid x \text{ is a real number and } x \neq \frac{8}{5}\right\}$
- D. all real numbers

21. Find the domain of the function.

$$f(x) = \frac{7}{x - 12}$$

What is the domain of f ?

- A. $\{x \mid x \text{ is a real number and } x \neq 12 \text{ and } x \neq 0\}$
- B. $\{x \mid x \text{ is a real number}\}$
- C. $\{x \mid x \text{ is a real number and } x \neq 0\}$
- D. $\{x \mid x \text{ is a real number and } x \neq 12\}$

22. Find the domain of the function.

$$p(x) = x^3 - x^2 + x - 4$$

What is the domain of p ?

- A. $\{x \mid x \text{ is a real number and } x \neq 4\}$
- B. $\{x \mid x \text{ is a real number and } x \neq 0\}$
- C. $\{x \mid x \text{ is a real number}\}$
- D. $\{x \mid x \text{ is a real number and } x > 0\}$

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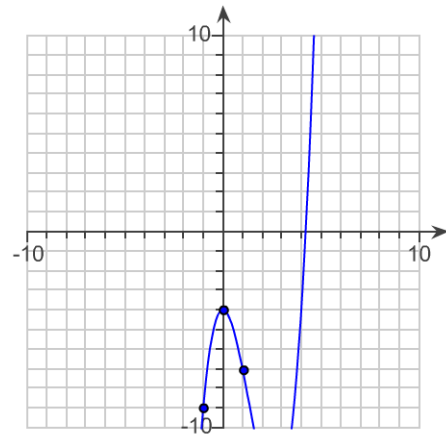
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23. Use the graph of the function f to find $f(-1)$, $f(0)$, and $f(1)$.

$$f(-1) = -9$$

$$f(0) = -4$$

$$f(1) = -7$$



24. Find the slope and the y-intercept.

$$4x - 7y = 6$$

The slope is $\frac{4}{7}$.

(Type an integer or a fraction.)

The y-intercept is $\left(0, -\frac{6}{7}\right)$.

(Type an integer or a fraction.)

25. Find the slope and the y-intercept.

$$5 - \frac{1}{2}y = 4x$$

The slope is -8 .

The y-intercept is $(0, 10)$.

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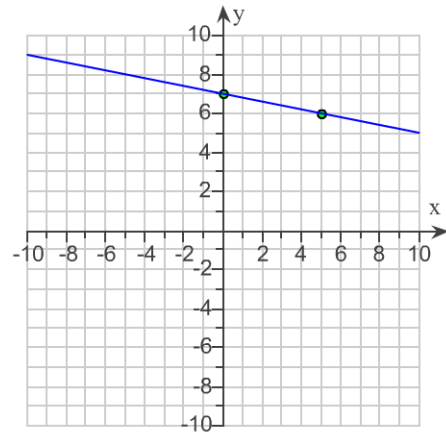
26. Find the slope of the line.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The slope of the line is $m = -\frac{1}{5}$.

(Type an integer or a simplified fraction.)

B. The slope is undefined.



27. Find the slope of the line containing the following pair of points.

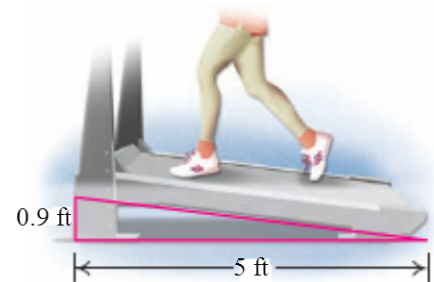
$(9, -2)$ and $(3, -6)$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. $m = \frac{2}{3}$ (Simplify your answer. Type an integer or a simplified fraction.)

B. The slope is undefined.

28. Find the slope (or grade) of the treadmill shown to the right.



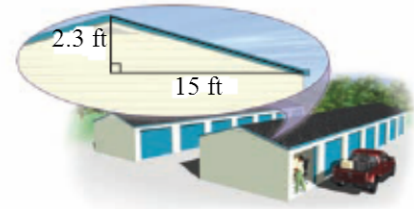
The grade of the treadmill is 18% . (Simplify your answer.)

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29. Find the slope (or pitch) of the roof shown to the right.



The pitch of the roof is 15 %. (Round to the nearest percent as needed.)

30. The graph shows data from a recent satellite internet connection.

The connection service billed at a rate of how many cents per minute?

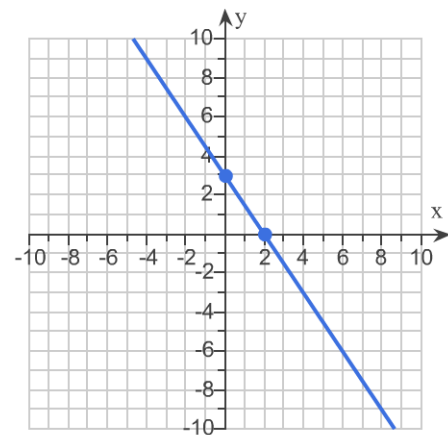
- A. 3
 B. 6
 C. 9
 D. 0



31. Find the intercepts and then use them to graph the equation.

$$3x + 2y = 6$$

Use the graphing tool to graph the line. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



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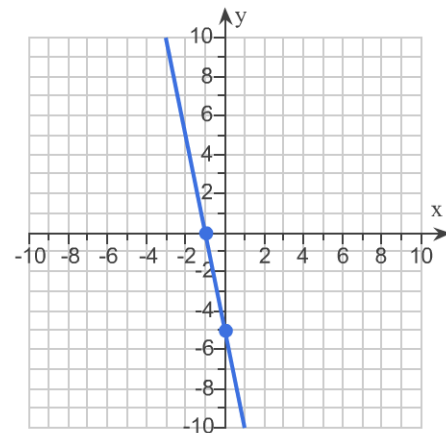
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32. Find the intercepts and then use them to graph the equation.

$$y = -5 - 5x$$

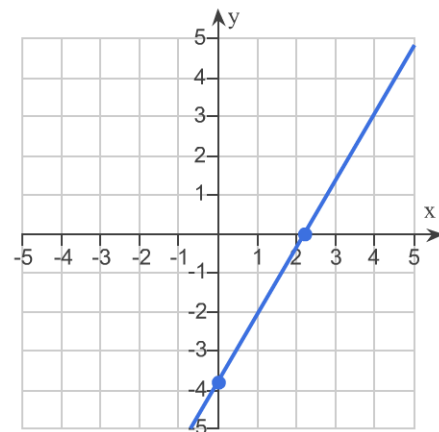
Use the graphing tool to graph the line. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



33. Find the intercepts and then use them to graph the equation.

$$1.9x - 1.1y = 4.18$$

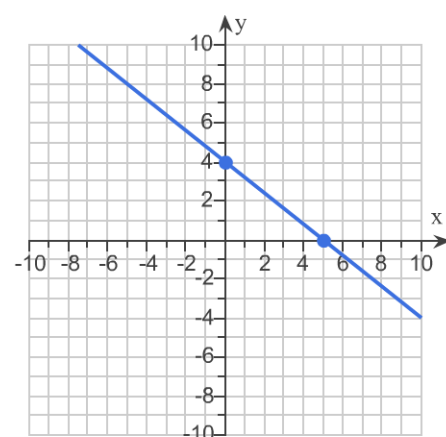
Use the graphing tool to graph the line. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



34. Find the intercepts and then use them to graph the equation.

$$4x + 5y = 20$$

Use the graphing tool to graph the line. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



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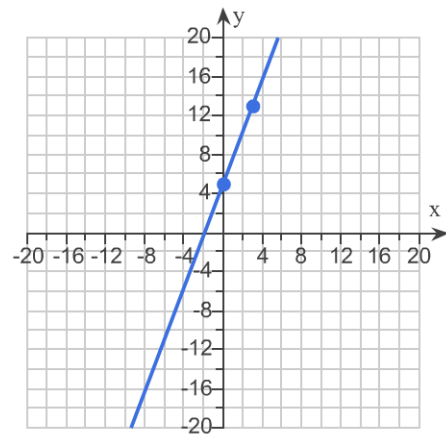
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35. Graph the equation using the slope and the y-intercept.

$$y = \frac{8}{3}x + 5$$

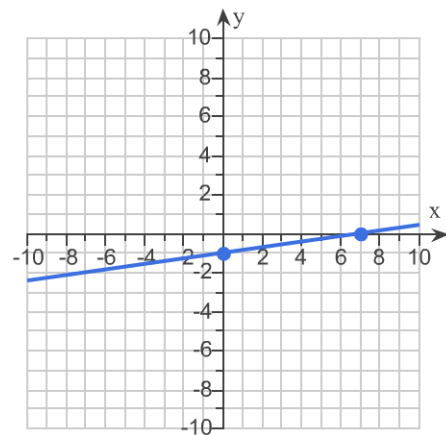
Use the graphing tool to graph the line. Use the slope and y-intercept when drawing the line.



36. Graph the linear equation using the slope and y-intercept.

$$y = \frac{1}{7}x - 1$$

Use the graphing tool to graph the equation. Use the slope and y-intercept when drawing the line.



37. Graph the following equation and if possible, determine the slope.

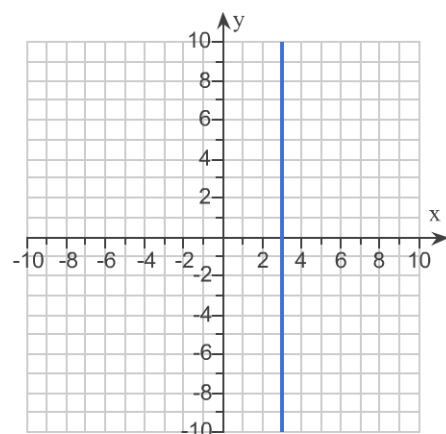
$$x = 3$$

Use the graphing tool on the right to graph the equation.



What is the slope of the line?

- A. $m =$
(Type an integer or a fraction.)
- B. The slope is not defined.



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38. Graph the following equation and if possible, determine the slope.

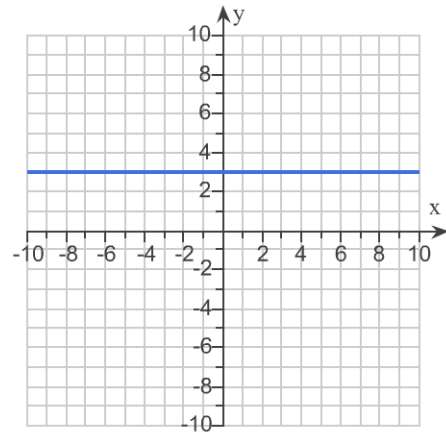
$$f(x) = 3$$

Use the graphing tool on the right to graph the equation.



What is the slope of the line?

- A. $m = 0$
(Simplify your answer.)
- B. The slope is not defined.



39. Determine whether the graphs of the two lines are parallel.

$$y + 2 = 6x$$

$$7x - y = -2$$

Are the graphs of the given equations parallel?

- No
- Yes

40. Determine whether the graphs of each pair of lines are parallel.

$$3x + 6 = y$$

$$2y = 6x - 5$$

Are the graphs of the given equations parallel?

- Yes
- No

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41. Determine whether the graphs of the given pair of lines are parallel.

$$\begin{aligned}14x &= 8 \\ -5x &= 3\end{aligned}$$

Are the graphs of the given equations parallel?

- Yes
 No

42. Determine whether the graphs of the two equations are perpendicular.

$$y = 4x - 9$$

$$8y = 7 - x$$

Are the graphs of the given equations perpendicular?

- No
 Yes

43. Determine whether the graphs of the equations are perpendicular.

$$\begin{aligned}5x - 9y &= 8, \\ 5y - 9x &= 7\end{aligned}$$

Are the graphs of the given equations perpendicular?

- No
 Yes

44. Determine whether the graphs of the given pair of lines are perpendicular.

$$\begin{aligned}5x &= 4 \\ -3y &= 9\end{aligned}$$

Are the graphs of the given equations perpendicular?

- Yes
 No