

Warm up:

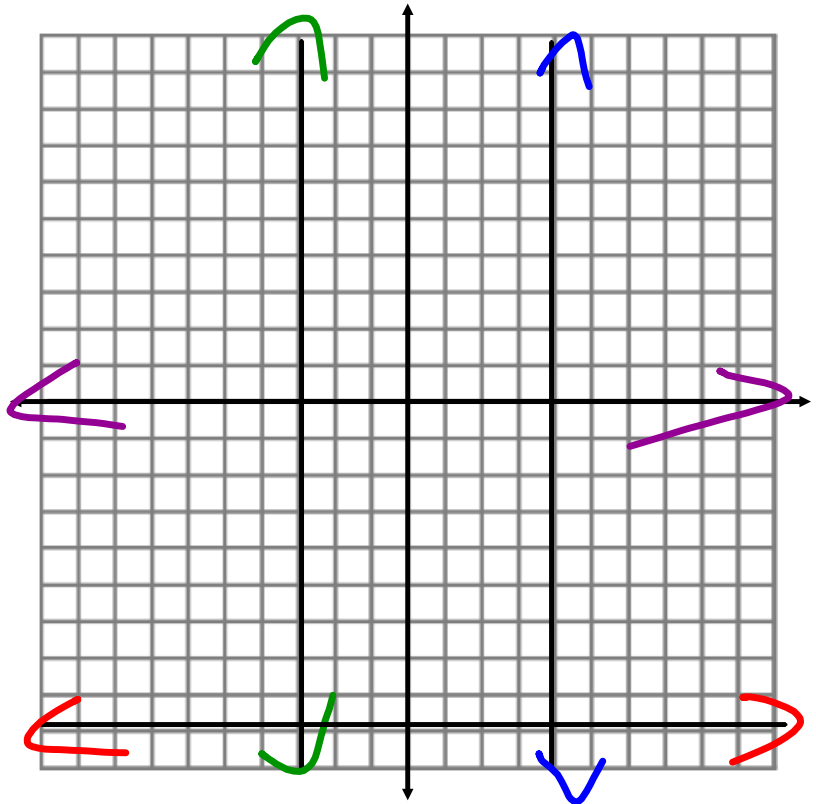
Graph.

1) $x = 4$

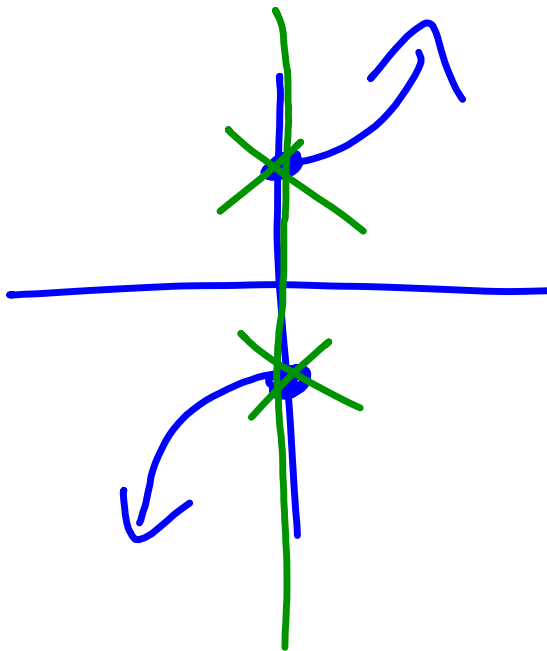
2) $x = -3$

3) $y = -9$

4) $y = 0$



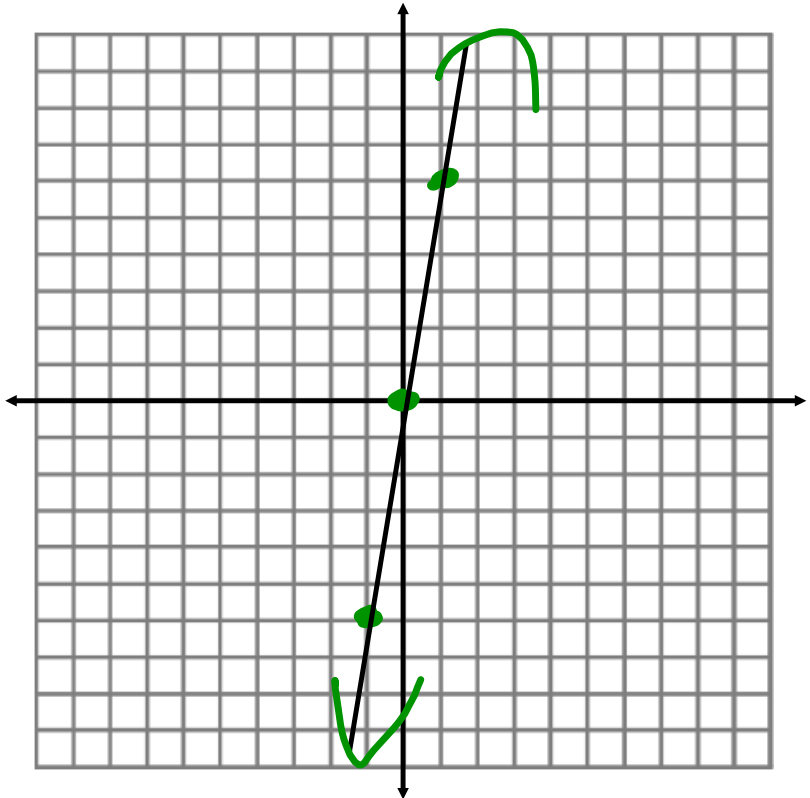
HW Solutions



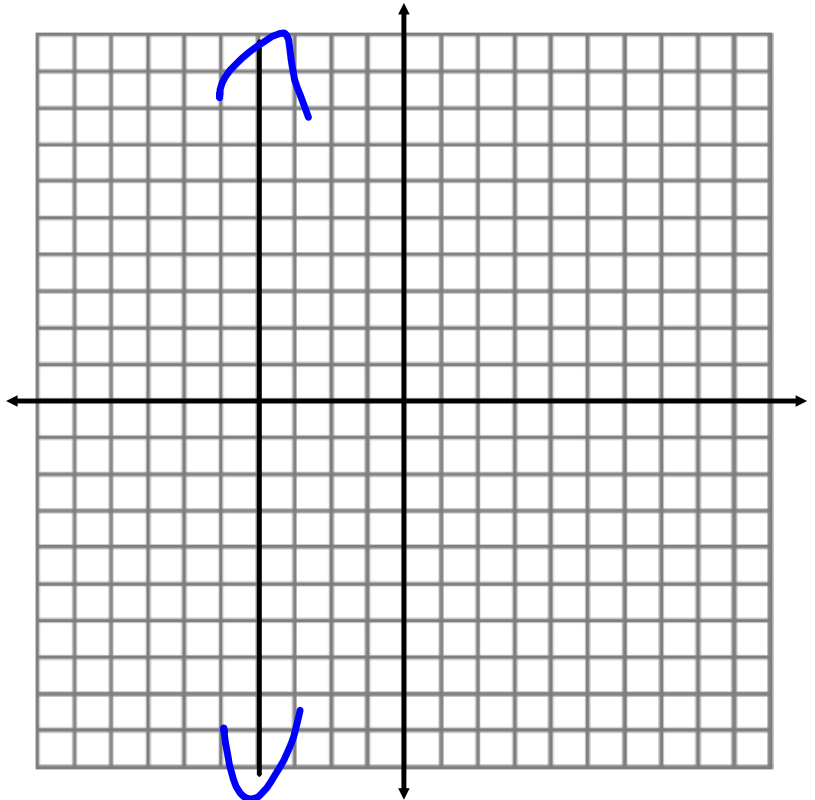
Showdown

A man is running at a speed of 6mph. Write and graph a function to represent the distance covered.

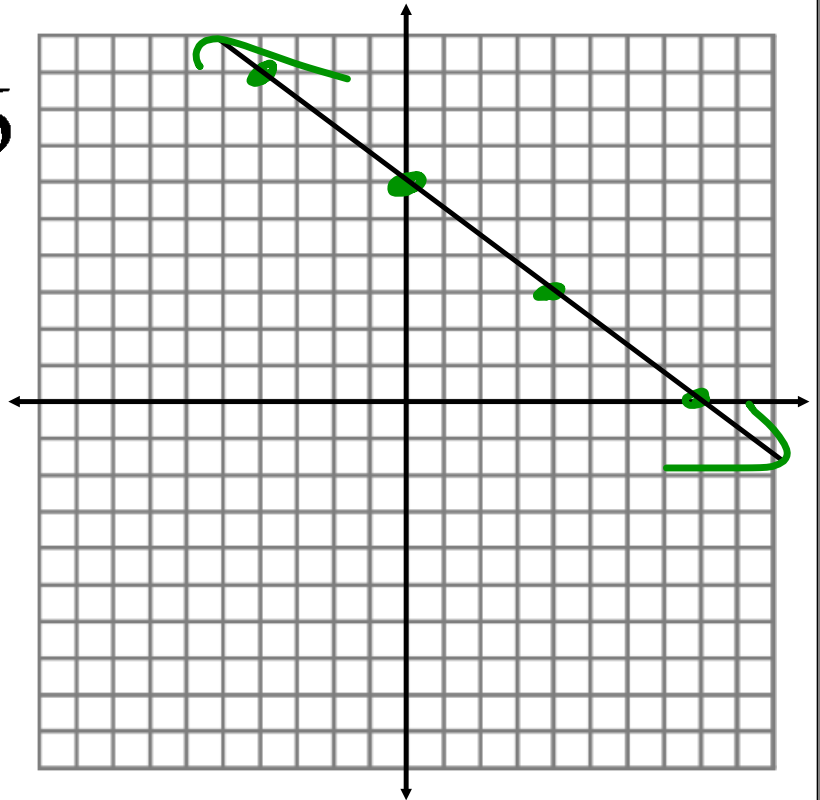
$$y = 6x$$



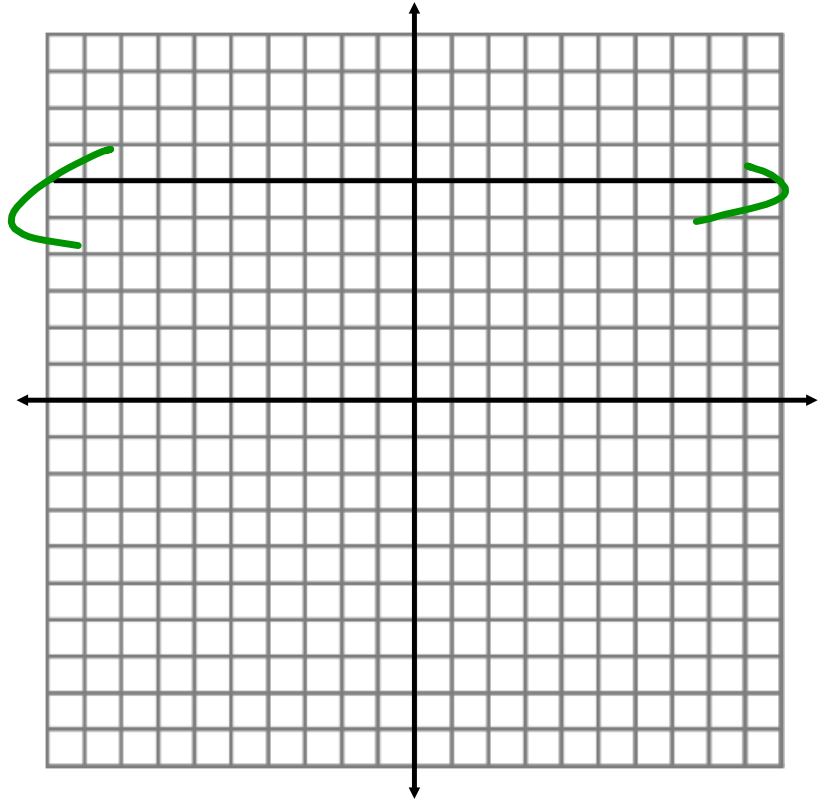
$$x = -4$$



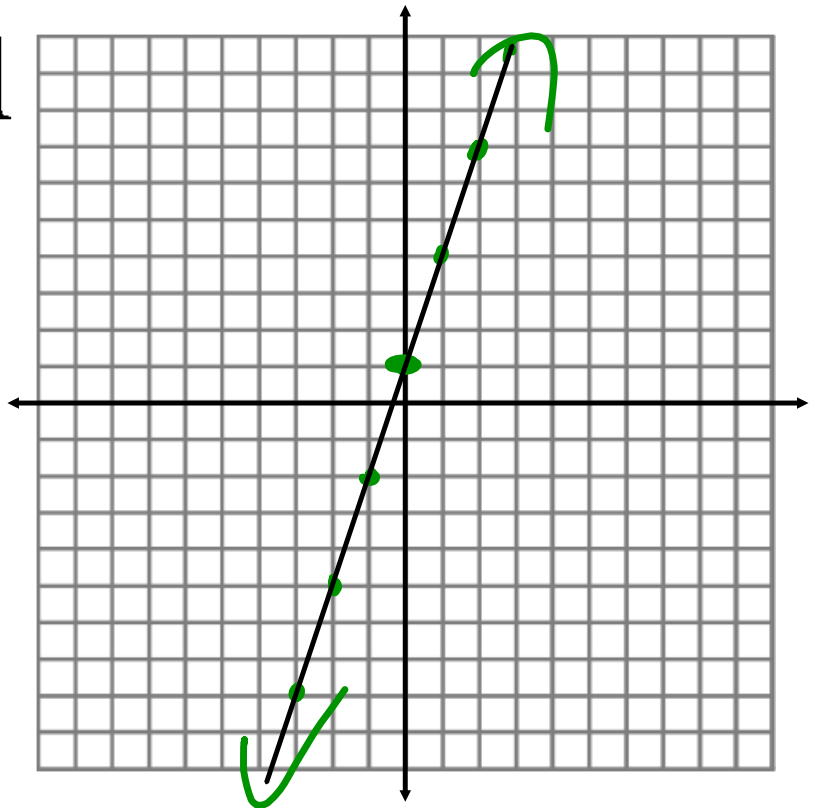
$$y = -\frac{3}{4}x + 6$$



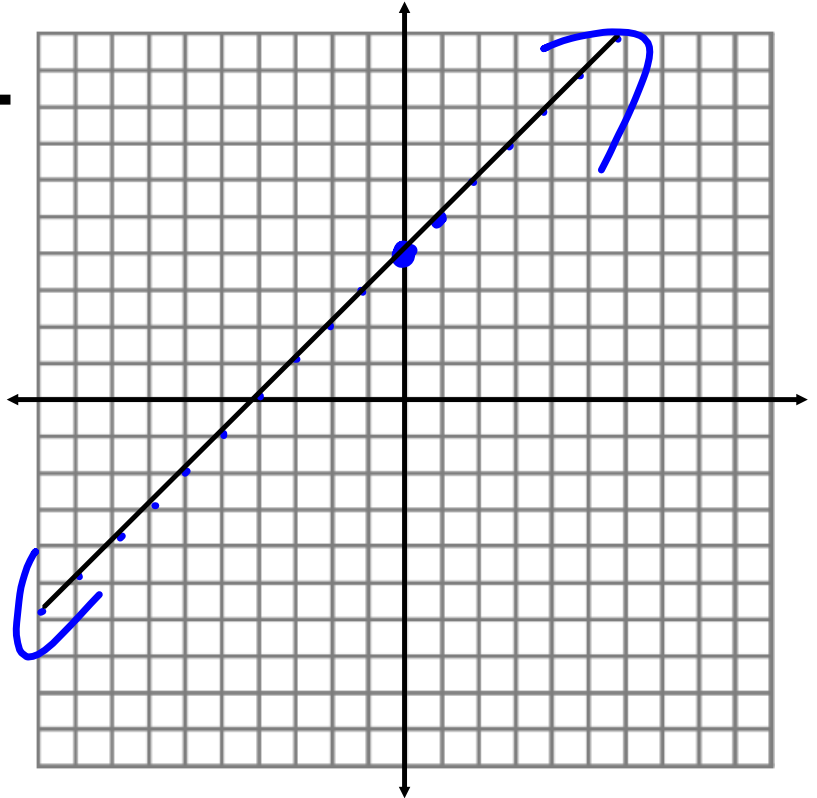
$$y = 6$$



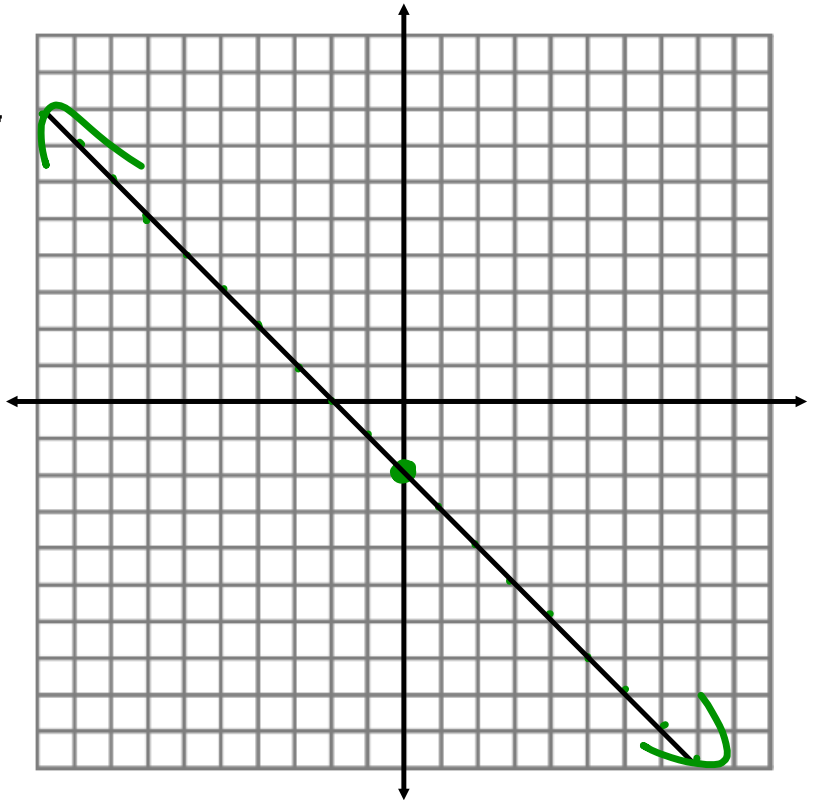
$$y = 3x + 1$$



$$y = x + 4$$

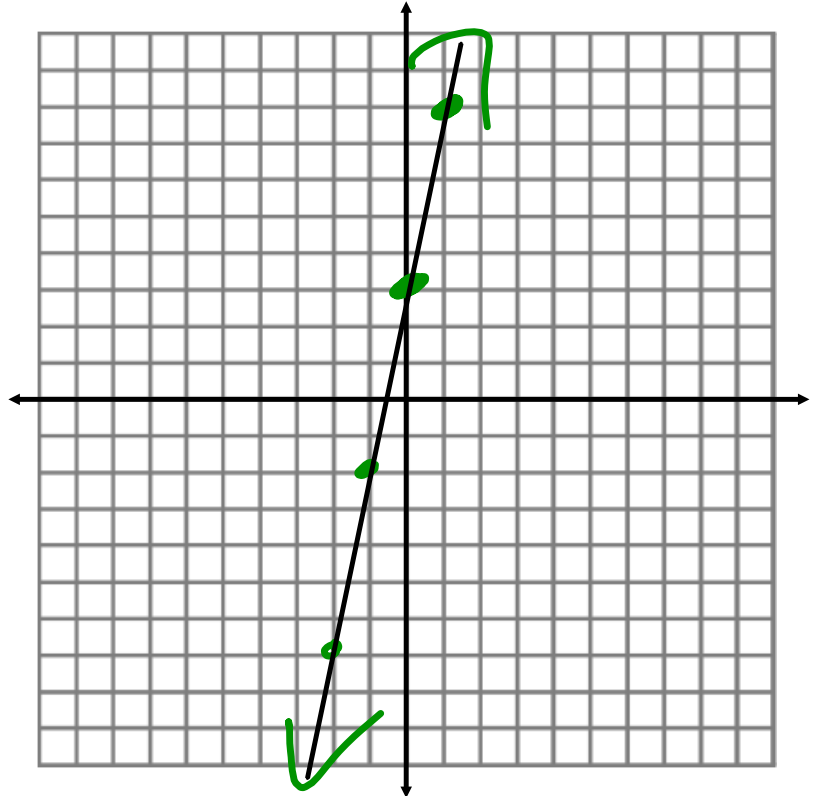


$$y = -x - 2$$

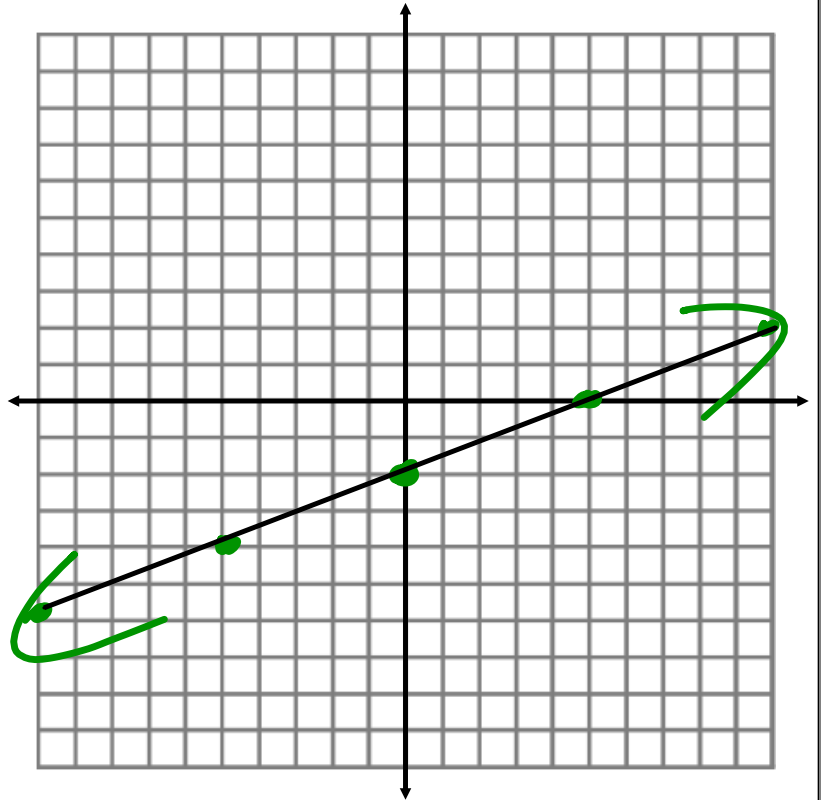


A T-shirt website charges \$3 for shipping on all orders. If the site charges \$5 for each T-shirt, write and graph a function to model the total cost of an order.

$$y = 5x + 3$$

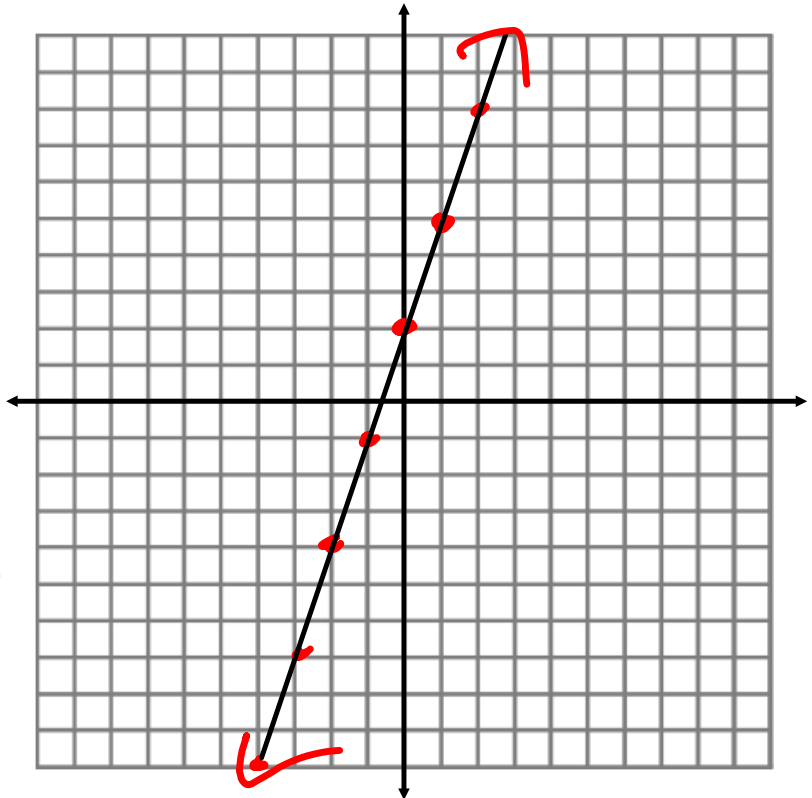


$$y = \frac{2}{5}x - 2$$



A taxi charges \$2 for the first mile and \$3 for each additional mile. Write and graph a function to model the total fare of a trip.

$$y = 3x + 2$$



You buy a pie for \$6 and some watermelons for \$4 each. Write a function to represent the total cost of your order. What do the slope and y-intercept mean?

$$y = 4x + 6$$

Identify the following function as linear or nonlinear.

$$4y - 3x = -10$$

linear

Will has \$2500 in his savings account. He works at a local grocery store and makes \$350/week. Write a function to represent how much money he has. What do the slope and y-intercept mean?

$$y = 350x + 2500$$

What is the slope and y-intercept of the following function?

$$y = -\frac{4}{5}x - 3$$

slope = $-\frac{4}{5}$
y-intercept = -3

Write the function that passes through $(-4, 6)$ and $(-6, 9)$.

$$\frac{\Delta y}{\Delta x} = \frac{9-6}{-6-(-4)} = \frac{3}{-2} = -\frac{3}{2}$$

$$y = -\frac{3}{2}x + b$$

$$6 = -\frac{3}{2}(-4) + b$$

$$6 = 6 + b$$

$$\begin{array}{r} 6 \\ -6 \\ \hline 0 = b \end{array}$$

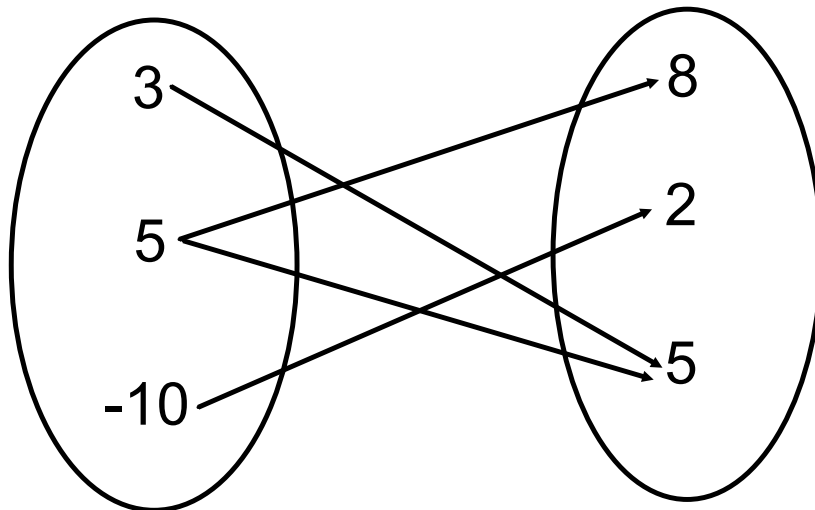
$$y = -\frac{3}{2}x$$

Identify the following function as linear or nonlinear.

<u>x</u>	<u>y</u>
2	16
5	12
8	8
11	4

What is the slope of the line $x = 7$?

Does the following relationship represent a function?



Identify the following function as linear or nonlinear.

$$4x = y$$

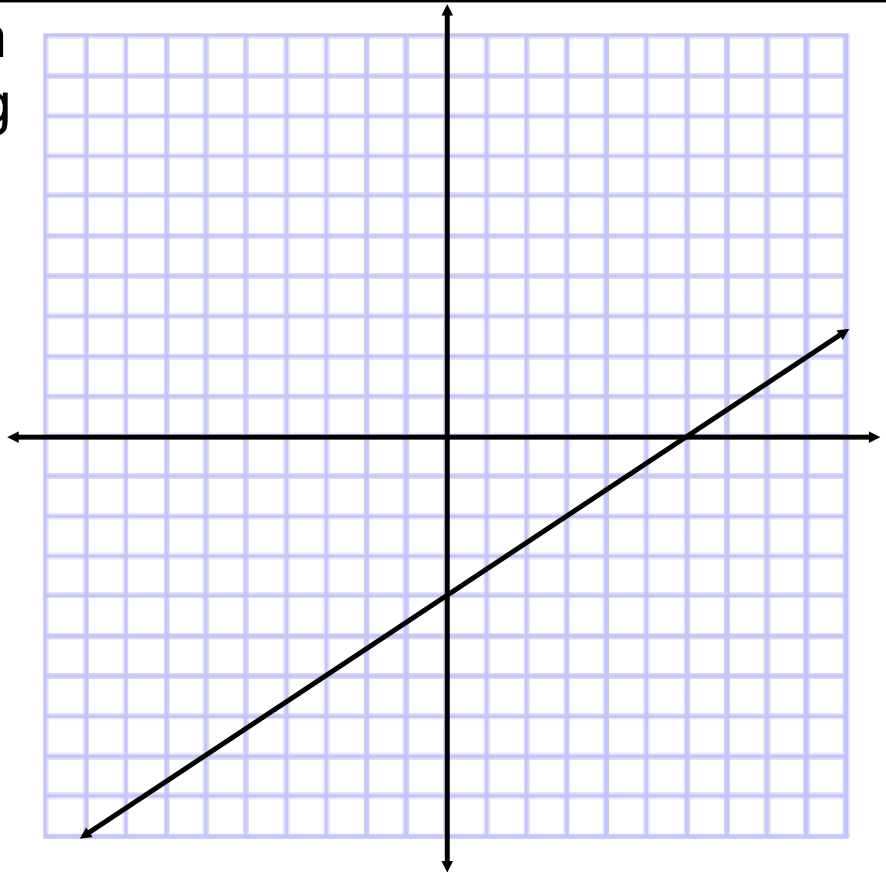
There is a tree in your yard that is 11ft tall. It grows 5 inches per week. Write a function to represent the height of the tree. What do the slope and y-intercept mean?

What is the slope and y-intercept of the following function:

$$y = x$$

A water tank has 60 gallons of water in it. There is a leak that causes the tank to lose 2 gallons per minute. Write a function to represent the amount of water in the tank. What do the slope and y-intercept mean?

Write a function for the following line.



Write a function for the line with the following function table.

x	y
4	-2
3	-4
2	-6
1	-8
0	-10

Identify the following function as linear or nonlinear.

$$y = 4x^3 + 1$$

Identify the following function as linear or nonlinear.

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

Identify the following function as linear or nonlinear.

$$y = \frac{x}{12}$$

Write the function for the line that passes through $(-5, 5)$ and $(-6, 10)$.

What is the slope of the line $y = 5$?

Identify the following function as linear or nonlinear.

<u>x</u>	<u>y</u>
1	5
2	9
3	11
4	12

Identify the function as linear or nonlinear.

$$x = 3$$

What is the slope and y-intercept of the following function?

$$y = -x + 8$$

Tom is driving at a speed of 52mi/h. Write a function to model the situation and explain what the slope and y-intercept mean.

Write a function for the line through $(2, -6)$ and $(-5, 15)$.

A tree trimming business charges \$50 for an estimate and \$80/h to do the job. Write a function to model the situation and explain what the slope and y-intercept mean.

