

Algebra 1 3.6

Write an equation for a proportional relationship

Write an equation for a nonproportional relationship

linear

slope

constant of variation

y-intercept

directly proportional

proportional

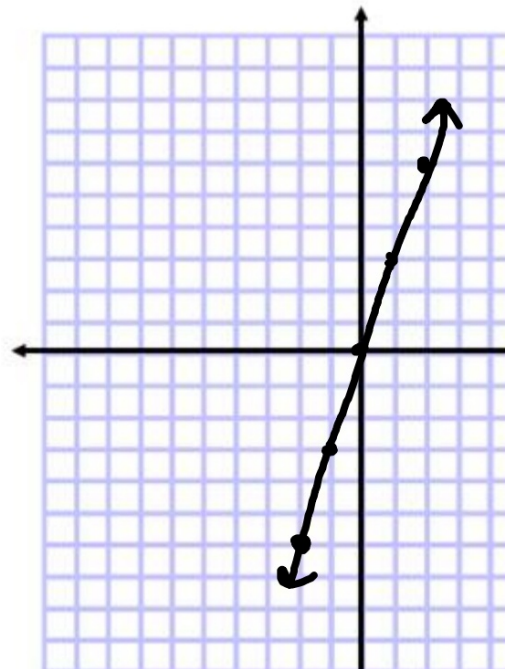
nonproportional

whiteboards(?)

matching activ.

$$y = 3x$$

|    | $3x$         |    |
|----|--------------|----|
| -2 | $3 \cdot -2$ | -6 |
| -1 | $3 \cdot -1$ | -3 |
| 0  | $3 \cdot 0$  | 0  |
| 1  | $3 \cdot 1$  | 3  |
| 2  | $3 \cdot 2$  | 6  |

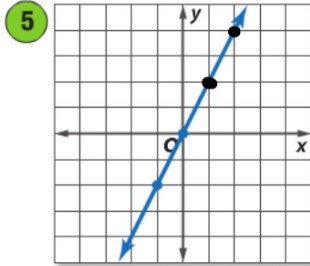


 **KeyConcept** Proportional Relationship

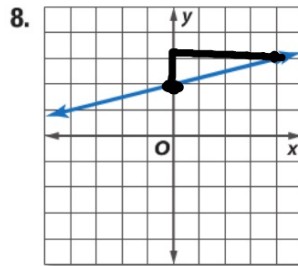
Words

A relationship is proportional if its equation is of the form  $y = kx$ ,  $k \neq 0$ . The graph passes through  $(0, 0)$ .

$$m = \frac{2}{1}$$



$$y = 2x = f(x) = 2x$$



$$m = \frac{1}{4}$$

$$y = \frac{1}{4}x + 2$$
$$f(x) = \frac{1}{4}x + 2$$

Guided Practice

$$f(x) = -x + 4$$

2. Write an equation in function notation for the relation shown in the table.

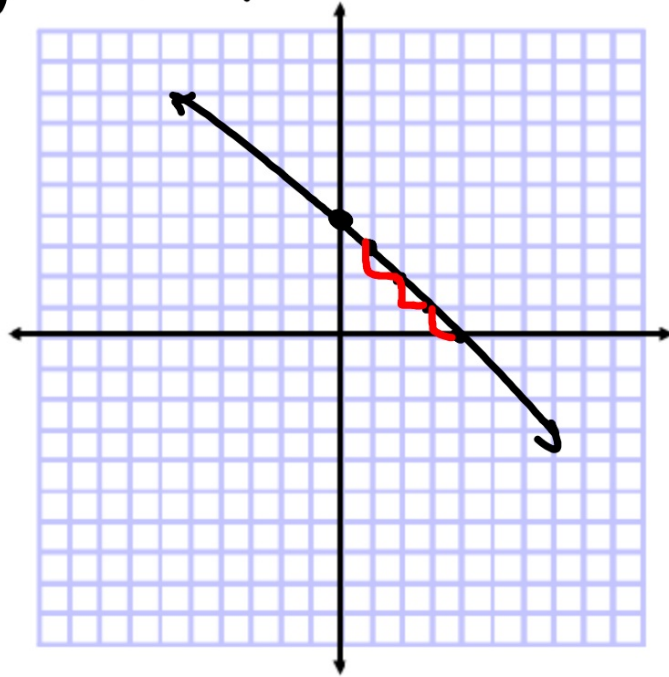
A.

|   |   |   |   |   |
|---|---|---|---|---|
| x | 1 | 2 | 3 | 4 |
| y | 3 | 2 | 1 | 0 |

$$y = -x + 4$$

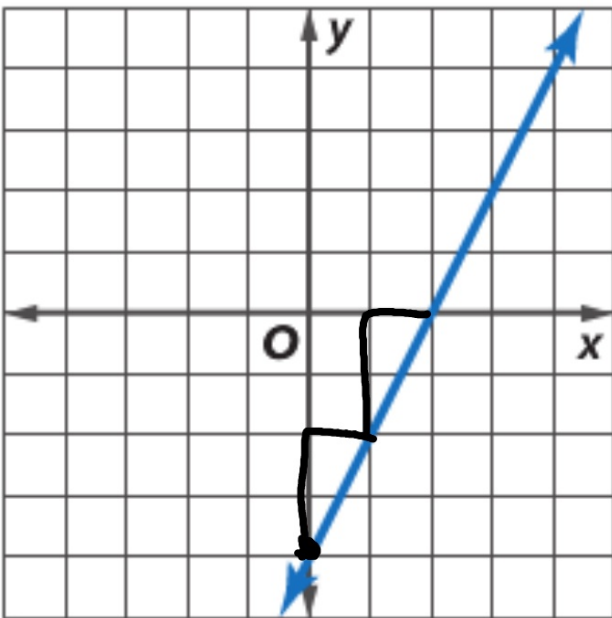
|   |   |
|---|---|
| 1 | 3 |
| 2 | 2 |
| 3 | 1 |
| 4 | 0 |

$$m = -1$$



## Whiteboards

- B. Write an equation in function notation for the graph.

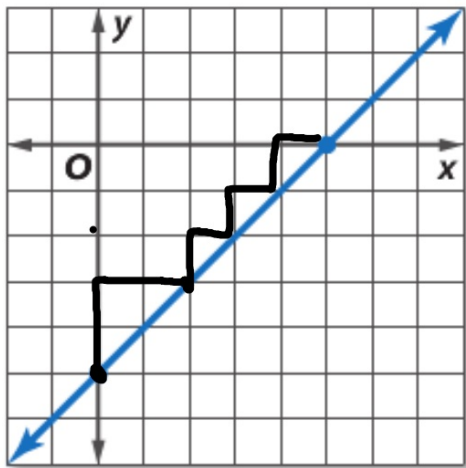


$$m = \frac{4}{1}$$

$$f(x) = 4x + -4$$

Write an equation in function notation

2.

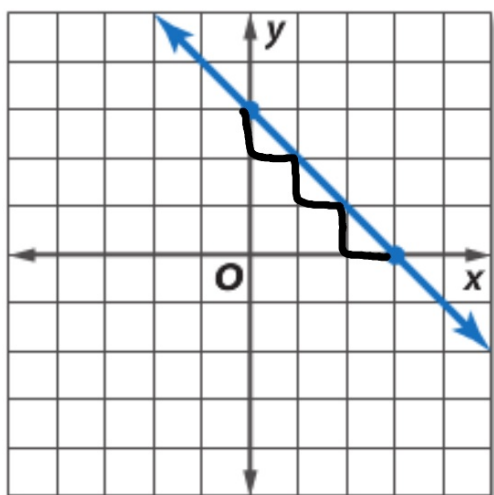


$$\frac{2}{2} = \frac{1}{1}$$

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

$$f(x) = x + 5$$

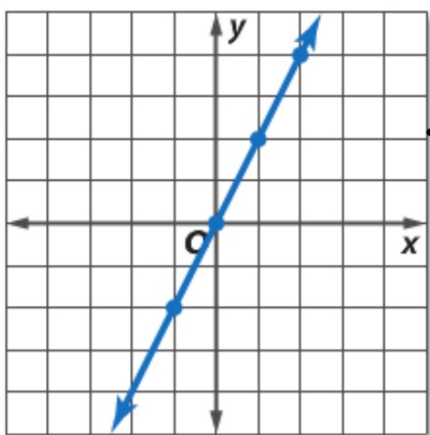
3.



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

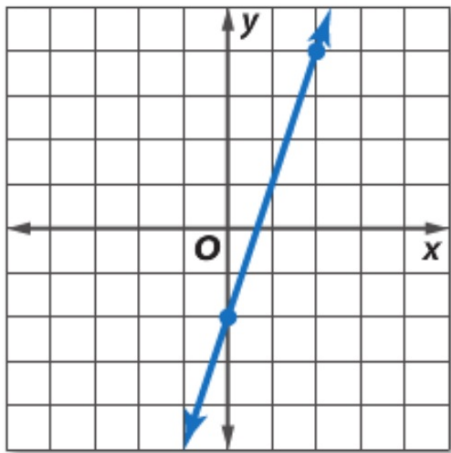
Write an equation in function notation

5



$$f(x) = \frac{2}{1}x + 0$$

7.



$$f(x) = \frac{3}{1}x - 2$$



