

Algebra 1

3.6

$$y = kx$$

Write an equation for a proportional relationship

Write an equation for a nonproportional relationship

linear

$$y = mx + b$$

slope

constant of variation

y-intercept

Quiz 3.4-3.5

directly proportional

proportional

nonproportional

whiteboards(?)

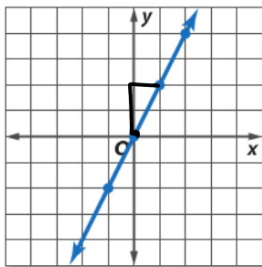
## KeyConcept Proportional Relationship

Words

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

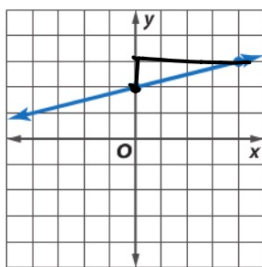
yes

5



$$y = 2x$$

8.



no

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

**2 Nonproportional Relationships** Some linear equations can represent a nonproportional relationship. If the ratio of the value of  $x$  to the value of  $y$  is different for select ordered pairs that are on the line, the equation is nonproportional and the graph will not pass through  $(0, 0)$ .

### Guided Practice

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

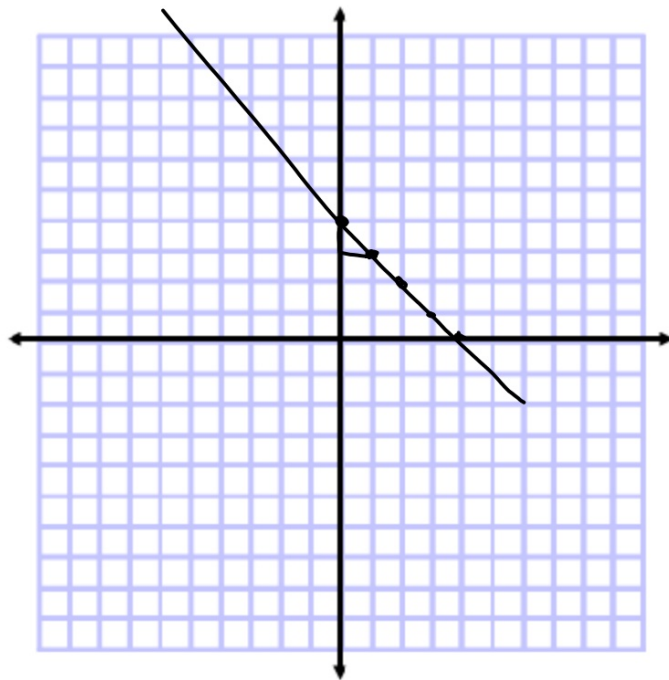
A.

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

O  
B

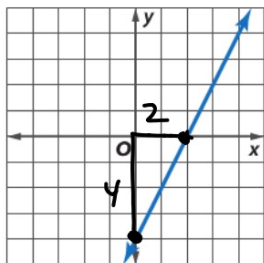
$$y =$$

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



## Whiteboards

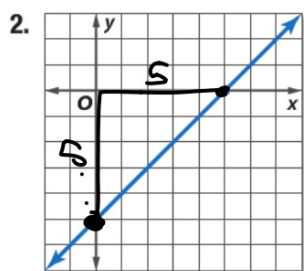
- B. Write an equation in function notation for the graph.



$$f(x) = 2x + 4$$

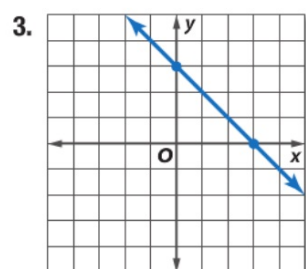
$$\frac{4}{2} \quad \frac{2}{1}$$

Write an equation in function notation

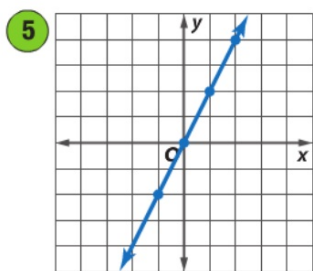


$$y = x - 5$$

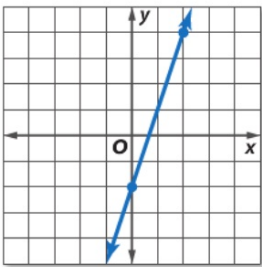
$$f(x) = x - 5$$



Write an equation in function notation



7.



phone .05 per text 35.00

$$y = .05x + 35.00$$

↑                      ↑  
rate                  Starting  
of  
change

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