

## Warm Up

2/7/19

1. Determine whether the relation  
 $\{(7, 2), (-10, 3), (-5, -1), (7, 3)\}$  is a function. Explain.

*Not a function*

2. Find  $f(-6)$  if  $f(x) = -2x + 20$

$$\begin{aligned}f(-6) &= -2(-6) + 20 & (-6, 32) \\f(-6) &= 32\end{aligned}$$

3. Solve:  $14 - x = x + 60$

$$\begin{array}{r} \cancel{-x} \quad \cancel{-x} \\ \hline 14 - 2x = 60 \\ \hline -14 \quad -14 \\ \hline -2x = 46 \\ \hline -2 \quad -2 \\ \hline x = -23 \end{array}$$

4. If  $10 - (3x + 5) > 26$  and  $x$  is an integer, what is the greatest value of  $x - 4$ ?

$$\begin{aligned}10 - (3x + 5) &> 26 \\10 - 3x - 5 &> 26 \\-5 - 3x &> 26 \\-5 &\hline\end{aligned}$$

$$\begin{array}{r} -3x > 21 \\ -3 \quad -3 \\ \hline x < -7 \end{array}$$

$$\begin{array}{r} x - 4 \\ -8 - 4 = -12 \\ \hline \end{array}$$



A photograph of a desert landscape at sunset. The sky is filled with warm, horizontal clouds in shades of orange, yellow, and pink. In the foreground, several silhouettes of saguaro cacti stand against the bright horizon. A prominent cactus on the right has a speech bubble pointing towards it. The word "SLOPE" is written in bold, black, sans-serif capital letters inside the yellow speech bubble.

**SLOPE**

# SLOPE

$$\frac{\text{rise}}{\text{run}}$$

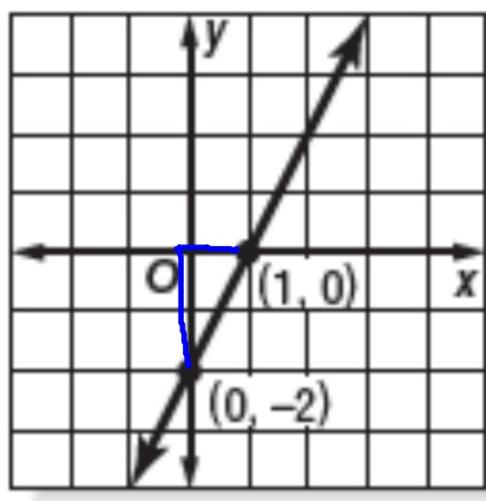
Four types of slope:

- Positive
- Negative
- Zero slope
- Undefined

$$\frac{y_2 - y_1}{x_2 - x_1}$$

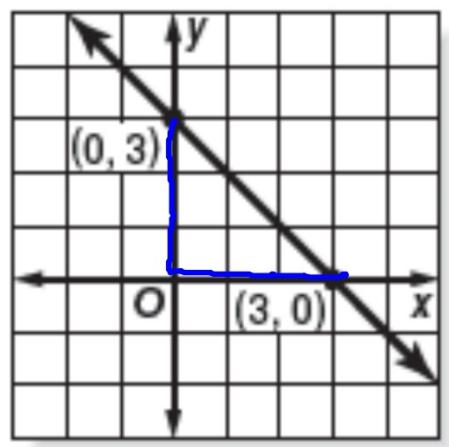
$$\frac{\text{rise}}{\text{run}}$$

Use when given a graph and asked to find slope

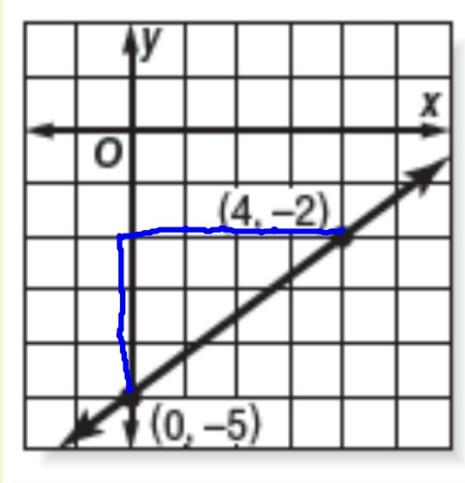


$$\begin{aligned}\text{rise} &= 2 \\ \text{run} &= 1\end{aligned}$$

$$\text{slope} = \frac{2}{1} = \boxed{-2}$$



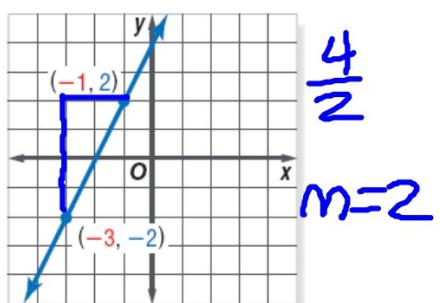
$$\frac{-3}{3} = -1$$



$$\frac{3}{4}$$

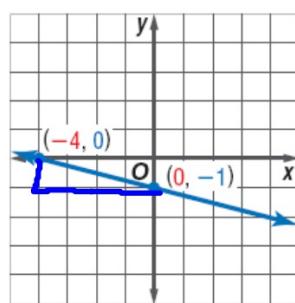
Find the slope of each line.

a.



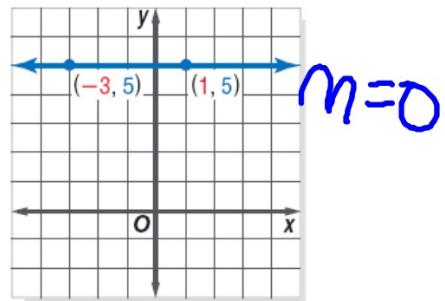
$$\frac{4}{2}$$
$$m=2$$

b.



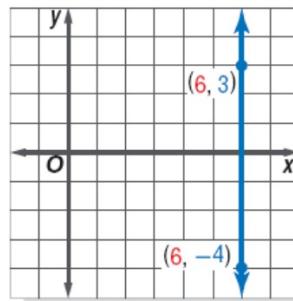
$$m=-\frac{1}{4}$$

c.



$$m=0$$

d.



$$m=\infty$$

When given two points, you find the slope by using the formula:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$(x_1, y_1)$

$(x_2, y_2)$

$$\begin{matrix} x_1 & y_1 & x_2 & y_2 \\ 1. & (-4, 7) & (-10, 9) \end{matrix}$$

$$m = \frac{9-7}{-10+4} = \frac{2}{-6} = \boxed{-\frac{1}{3}}$$

$$3. \underline{(-5, -4)}, \underline{(-5, 10)}$$

$$m = \emptyset$$

$$5. (3, 10), (-15, 4)$$

$$m = \frac{4-10}{-15-3} = \frac{-6}{-18} = \boxed{\frac{1}{3}}$$

$$2. (12, 6), (-2, 10)$$

$$m = \frac{10-6}{-2-12} = \frac{4}{-14} = \boxed{-\frac{2}{7}}$$

$$4. (6, -2), (0, -5)$$

$$m = \frac{-5+2}{0-6} = \frac{-3}{-6} = \boxed{\frac{1}{2}}$$

$$6. (0, 9), (-16, 9)$$

$$m = 0$$

