

Hand back quizzes

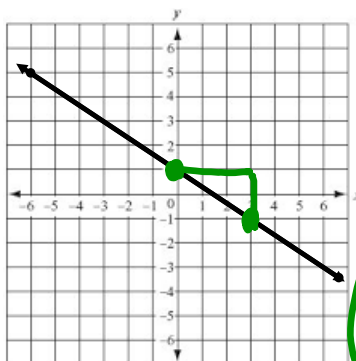
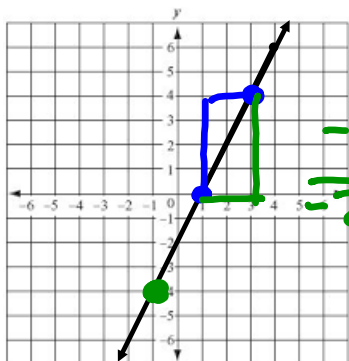
What is another word for "rate of change"?

Slope!



Finding Slope from a Graph

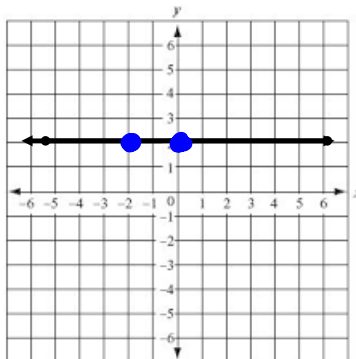
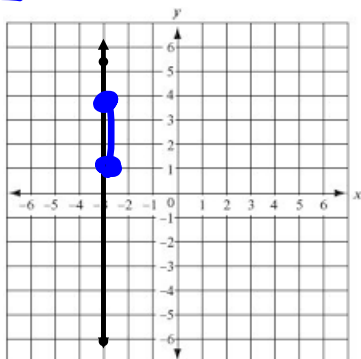
Slope = m



$\frac{\text{Rise}}{\text{Run}}$ (Change in y)
(Change in x)

$\frac{2}{-3}$

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



$\frac{3}{0}$ undefined

$\frac{0}{2} = 0$



$$\text{Slope} = m = \frac{\text{Change in } y}{\text{Change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

“Slope Rida” Lyrics

The difference of y and the difference of the x

Also known as rise over run

Divide the two!

And then reduce!

Then you got slope, slope, slope, slope, slope....

Well I’m sittin’ in math and I’m tryin’ to find how to get the slope, the slope of the line

Then you count the rise and run all the time

And I think of this song and I’m gonna be fine

Half slope come on, one slope come on, two slope come on

You think I’m a dope, I gotta say nope I’m gonna find the slope!

Finding Slope from Two Points

It doesn't matter which point you start with, but always start with the same point for both y and x!

1. Find the slope of the line that passes through the points

$(9,2)$ and $(-3,0)$.
$$\frac{2-0}{9-(-3)} = \frac{2}{12} = \frac{1}{6}$$

2. Find the slope of the line that passes through the points

$(\frac{1}{4}, -\frac{1}{2})$ and $(\frac{3}{4}, 6)$
$$\frac{(6 + \frac{1}{2})}{((\frac{3}{4}) - (\frac{1}{4}))} = \frac{\frac{13}{2} \cdot \frac{2}{1}}{\frac{1}{2}} = 13$$

Find the slope of the line that passes through the points...

3. (4.5, 7) and (-8.5, -2)

$$\frac{7 + 2}{4.5 + 8.5} = \frac{9}{13}$$

4. (-1, 5) and (3, -7)

$$\frac{5 + 7}{-1 - 3} = \frac{12}{-4} = -3$$

5. (0, 6) and (4, 2)

$$\frac{6 - 2}{0 - 4} = \frac{4}{-4} = -1$$

6. $(\frac{5}{6}, -10)$ and $(\frac{1}{6}, -\frac{1}{2})$

$$\frac{-10 + \frac{1}{2}}{\frac{5}{6} - \frac{1}{6}} = \frac{-9\frac{1}{2}}{\frac{2}{3}} = -\frac{19}{2} \cdot \frac{3}{2} = \boxed{-\frac{57}{4}}$$

Challenge!

1. For the points $(6,1)$ and $(x,3)$ the slope is $\frac{2}{3}$. Find x .
2. For the points $(2,y)$ and $(4,10)$ the slope is 2 . Find y .
3. For the points $(2,y)$ and $(6,\frac{1}{3})$ the slope is $-\frac{1}{4}$. Find y .

