Warm Up 9/18

Solve for x:

$7 + 3(2 - 4x) = 4(7 - x) + 1$ → Distribute

$7 + 6 - 12x = 28 - 4x + 1$ → CLT

$13 - 12x = 29 - 4x$

$+4x \quad +4x$

$13 - 8x = 29$

$-13 \quad -13$

$-8x = 16$

$\frac{-8x}{-8} = \frac{16}{-8}$

$x = -2$

OR

$7 + 3(2 - 4x) = 4(7 - x) + 1$

$7 + 6 - 12x = 28 - 4x + 1$

$13 - 12x = 29 - 4x$

$+12x \quad +12x$

$13 = 29 + 8x$

$-29 \quad -29$

$\frac{-16}{8} = \frac{8x}{8}$

$-2 = x$

It doesn't matter what steps you take as long as you do the same thing to both sides!

Homework Questions?

Make sure you have checked the answer key!

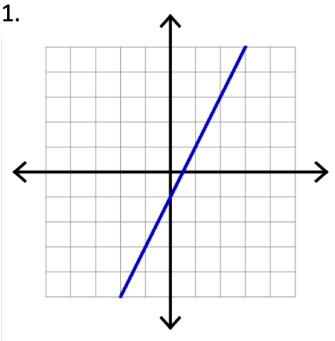
Name _____ Block _____ Date _____

Calculating Slope From a Graph or 2 Coordinate Pairs

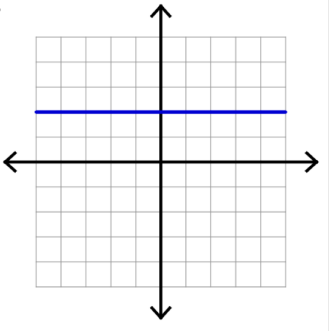
Find slope using a graph. (Make sure to select points with whole number coordinates.)

Remember: $\text{Slope} = \frac{\Delta y}{\Delta x}$ This should be written for <u>every problem</u> where you have to calculate slope.

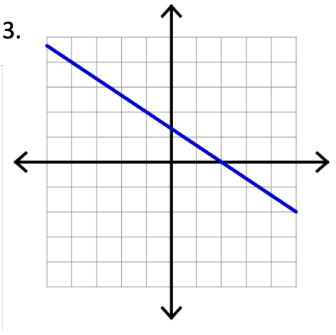
1.



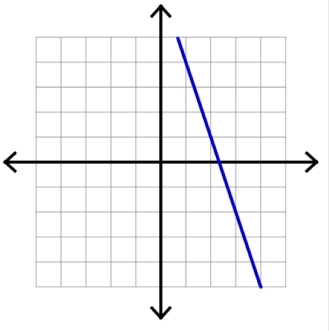
2.



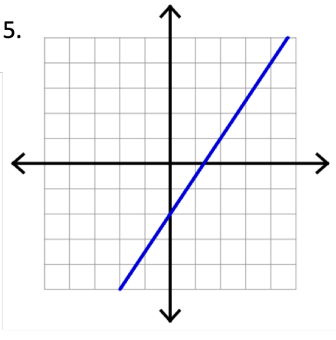
3.



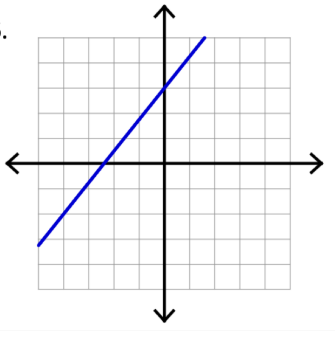
4.



5.



6.



Find the slope between two points. Show your thinking!

Remember: $\text{Slope} = \frac{\Delta y}{\Delta x}$ This should be written for every problem where you have to calculate slope.

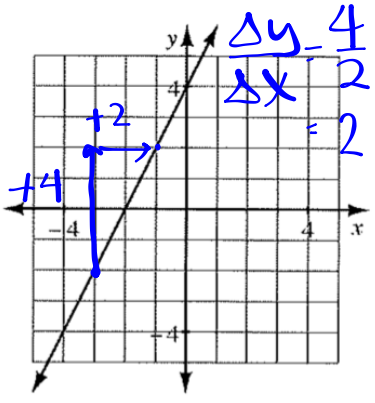
7. (1, −19), (−2, −7)	8. (−4, 7), (−6, −4)
9. (20, 8), (9, 16)	10. (3, 0), (−11, −15)

Match-A-Slope

Match the following graphs with their slopes. ***Pay special attention to the scaling on each set of axes***. Show your calculations to find each slope.

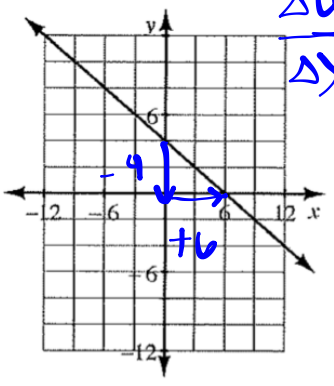
a. $slope = \frac{1}{4}$ b. $slope = \frac{1}{2}$ c. $slope = 2$ d. $slope = -\frac{2}{3}$

1.



$\frac{\Delta y}{\Delta x} = \frac{4}{2} = 2$

2.

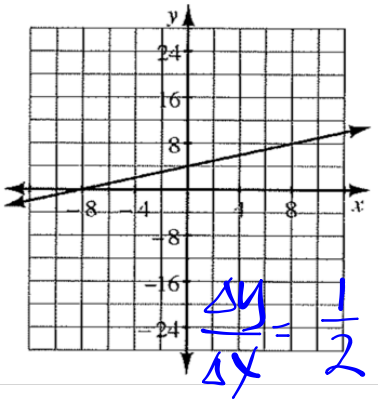


$\frac{\Delta y}{\Delta x} = \frac{-2}{3}$

$= \frac{-4}{6} = \frac{-2}{3}$

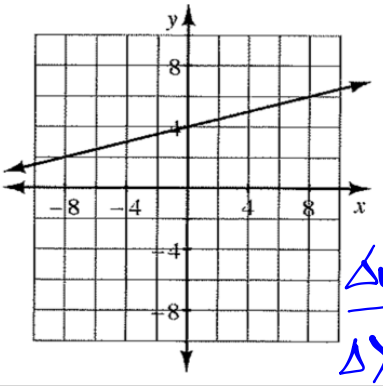
Tricky because the intervals on the axes are not alway equal to 1.

3.



$\frac{\Delta y}{\Delta x} = \frac{1}{2}$

4.



$\frac{\Delta y}{\Delta x} = \frac{1}{4}$

The intervals on the x-axis don't have to be the same as the intervals on the y-axis!!

Quiz Topics

SWBAT:

- Describe patterns of change in tables and graphs using proper mathematical language.

Increase / decrease

linear

constant rate of change / constant slope

changes

$\frac{\Delta y}{\Delta x}$

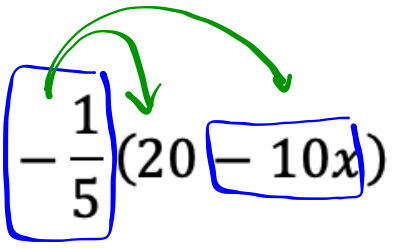
- Determine when data points should be connected on a graph.

Discrete vs. Continuous Data

- Solve for "x" ***algebraically,*** using proper format.

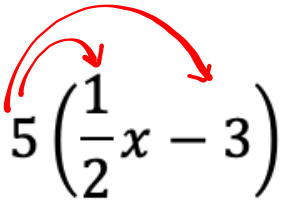
- Calculate slope given a graph or two points.

Distributing With Fractions



$$-\frac{1}{5}(20-10x)$$

$-4+2x$



$$5\left(\frac{1}{2}x-3\right)$$

$\frac{5}{2}x-15$

Solving With Fractions

$4\left[\frac{1}{4}x = 2\right]$

$x = 8$

$\frac{3}{1}\left[\frac{2}{3}x = 5\right]$

$2x = 15$

$\frac{2x}{2} = \frac{15}{2}$

$x = \frac{15}{2}$

$\frac{x}{3} + 2 = 7$

$-2 \quad -2$

$3\left[\frac{x}{3} = 5\right]$

$x = 15$

$3\left[\frac{x}{3} + 2 = 7\right]$

$x + 6 = 21$

$-6 \quad -6$

$x = 15$

$3\left[2x - \frac{1}{3} = 4\right]3$

$6x - 1 = 12$

$+1 \quad +1$

$\frac{6x}{6} = \frac{13}{6}$

$x = \frac{13}{6}$

$5\left[\frac{4}{5}x + 3 = \frac{-1}{5}\right]5$

$4x + 15 = -1$

$-15 \quad -15$

$\frac{4x}{4} = \frac{-16}{4}$

$x = -4$

Solving for x with Fractions

① $\frac{2}{3}x - 15 = 65$

② $2x = \frac{49}{5}$

③ $\frac{9}{10}x = -\frac{11}{10}$

$10\left[\frac{9}{10}x = -\frac{11}{10}\right]$

$9x = -11$

$\frac{9x}{9} = \frac{-11}{9}$

$x = \frac{11}{9}$

④ $\frac{12}{5} = \frac{1}{3} + x$

Different denominators, see below.

⑤ $x\frac{4}{7} = 14$

⑥ $x - \frac{x-1}{2} = 0$

⑦ $\frac{1}{3} = x + \frac{4}{3}$

⑧ $\frac{1}{2} + \frac{x}{3} = \frac{x}{2}$

⑨ $x - \frac{3}{9} = 15$

⑩ $\frac{2x-1}{3} + 3 = x$

#4 $3\left[\frac{12}{5} = \frac{1}{3} + x\right]$

$\frac{5}{1}\left[\frac{36}{5} = 1 + 3x\right]$

$36 = 5 + 15x$

$-5 \quad -5$

$\frac{31}{15} = \frac{15x}{15}$

$\frac{31}{15} = x$

Could we have multiplied both sides by a single number instead of having to multiply twice by different numbers?

$\frac{12}{5} = \frac{1}{3} + x$

$\frac{36}{15} = \frac{5}{15} + x$

$-\frac{5}{15} \quad -\frac{5}{15}$

$\frac{31}{15} = x$

Finding a common denominator can help!

Homework

Finish classwork