

February 24, 2015^{4th}

Starter

1.

$$1\frac{1}{2} \text{ ft/sec} = 18 \text{ in/sec}$$
$$\frac{3 \text{ ft}}{2 \text{ sec}} \cdot \frac{6 \text{ in}}{1 \text{ ft}} =$$

2.

$$2.5 \text{ gal/hr} = 10 \text{ qts/hr}$$
$$\frac{2.5 \text{ gal}}{\text{hr}} \cdot \frac{4 \text{ qt}}{1 \text{ gal}} =$$

3.

$$20 \text{ ft/sec} = 400 \text{ yd/min}$$
$$\frac{20 \text{ ft}}{\text{sec}} \cdot \frac{1 \text{ yd}}{3 \text{ ft}} \cdot \frac{60 \text{ sec}}{1 \text{ min}} =$$

4.

$$60 \text{ mph} = 88 \text{ ft/sec}$$
$$\frac{60 \text{ mi}}{\text{hr}} \cdot \frac{1 \text{ hr}}{3600 \text{ sec}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}}$$
$$= \frac{316800 \text{ ft}}{3600 \text{ sec}}$$

Kleymisky

2/24 - More Slope - computing algebraically

What is the definition of **slope**?

Steepness of a line, written as a fraction

How do you find the slope of a line on a graph?

$$\frac{\text{rise}}{\text{run}} \quad \frac{\text{up}}{\text{over}}$$

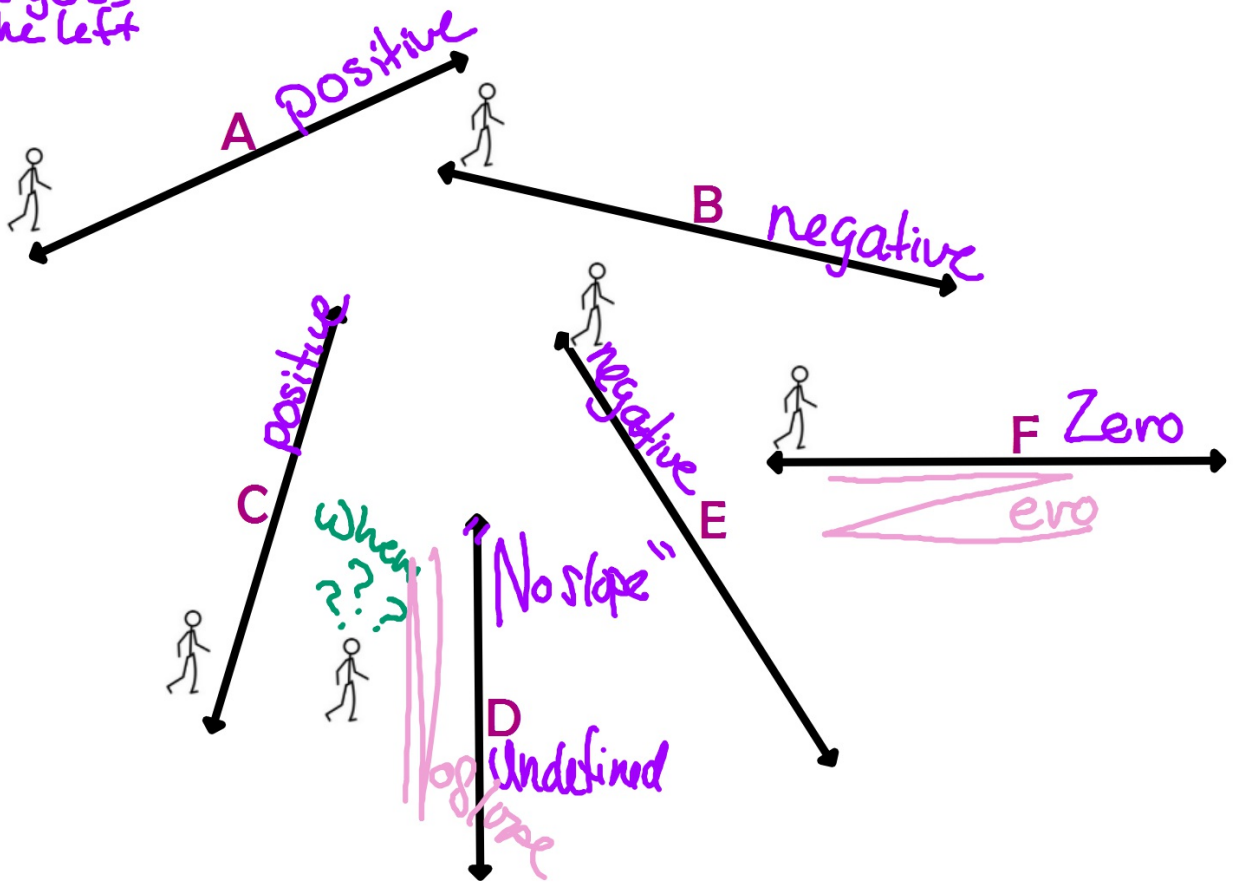
There are 3 different types of slopes we've not covered yet...

1. Negative
- 2.
- 3.

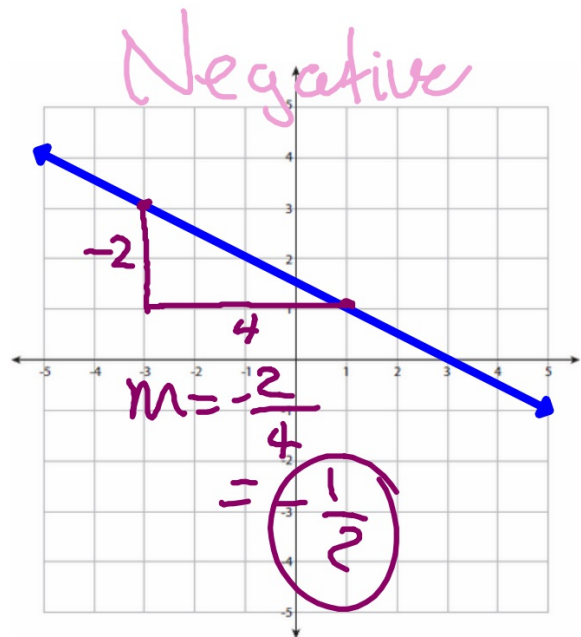
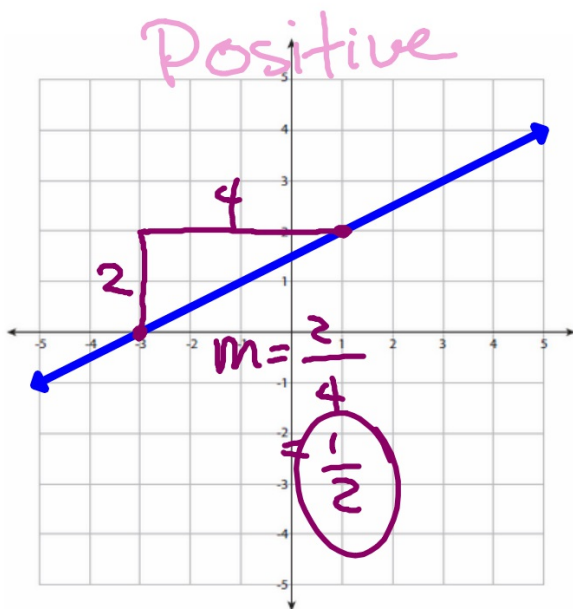


What can you tell about the slopes of these lines?

Dude goes on the left →

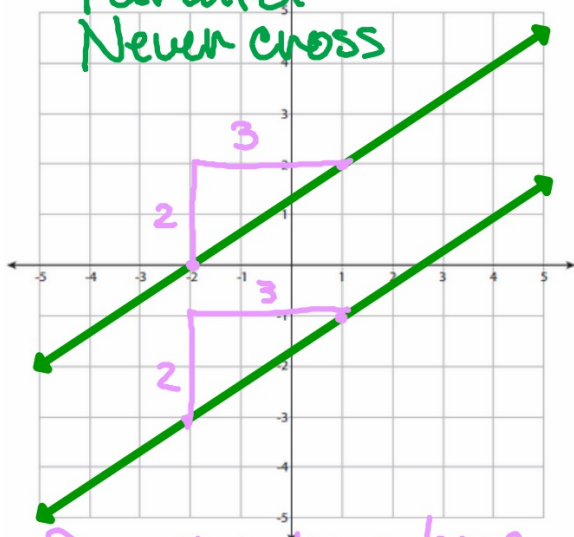


What can you tell about the slopes of these two lines?



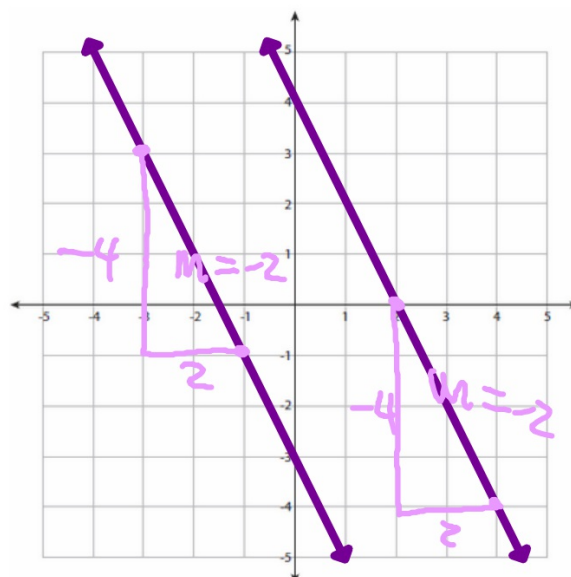
What about these two?

Both positive
Parallel
Never cross

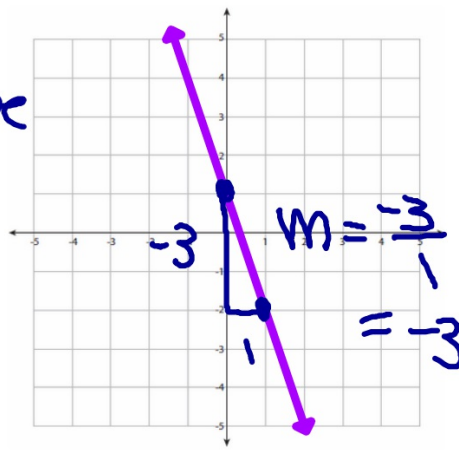
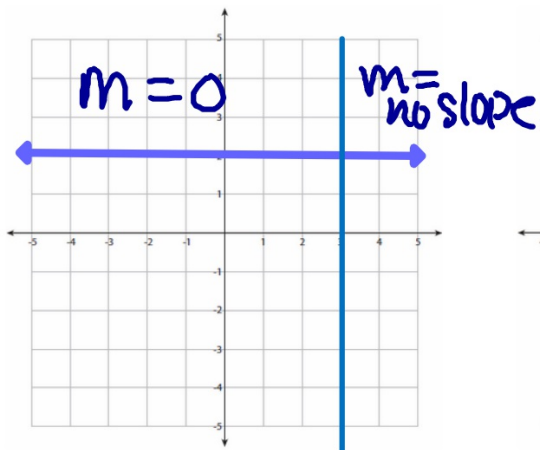
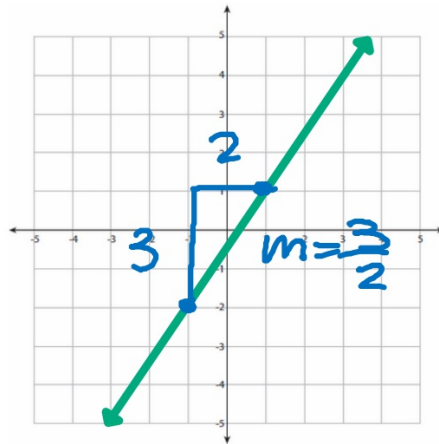
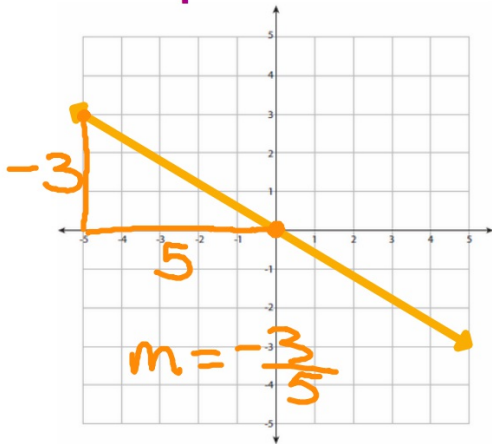


Parallel lines have
the same slope.

or these two?



Find the slopes of these lines:



You can do it algebraically, without a graph, if you have **two points** written as **coordinates**.

$$(x_1, y_1) \text{ and } (x_2, y_2)$$

Slope Formula

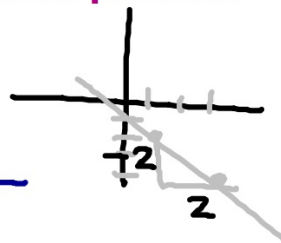
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the slopes of the lines that go through each set of points.

$$\begin{matrix} x_1 & y_1 & x_2 & y_2 \\ (1, -2) & (3, -4) \end{matrix}$$

$$m = \frac{-4 - (-2)}{3 - 1}$$

$$\begin{aligned} &= \frac{-4 + 2}{3 - 1} \\ &= \frac{-2}{2} \\ &= -1 \end{aligned}$$



Slope Formula

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

$$\begin{aligned} &(-2, -4) (3, 1) \\ m &= \frac{1 + (+4)}{3 + (+2)} \\ &= \frac{5}{5} \\ &= 1 \end{aligned}$$

$$\begin{aligned} &(-3, 4) (1, -2) \\ m &= \frac{-2 - 4}{1 + (+3)} \\ &= \frac{-6}{4} \\ &= -\frac{3}{2} \end{aligned}$$

Homework

Green WS 10

Due Wed. end of class