Unit Linear Functions

Day 2
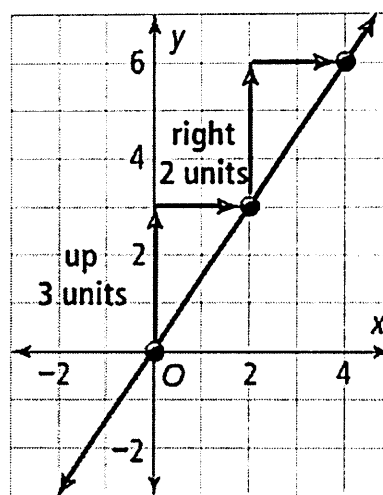## The Slope of a Line (from a graph)

I can ...

> ... find the slope of a line on a graph.
> ... find the slope of a line given two points.

SLOPE: The slope of a line is the ratio of the vertical change to the horizontal change.

$$\text{slope} = \frac{\text{vertical change}}{\text{horizontal change}} \quad \begin{array}{l} \leftarrow \text{rise} \\ \leftarrow \text{run} \end{array}$$
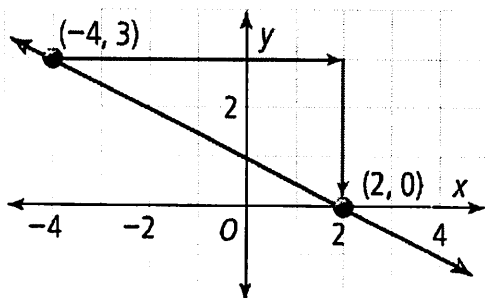
$$= \frac{3}{2}$$

The slope of the line is $\frac{3}{2}$.

You can find the slope of the line by ...

... determining the change in y and the change in x from one point to the next on the graph.

OR

... making a "little-bitty" table with two coordinate points and finding the rate of change.
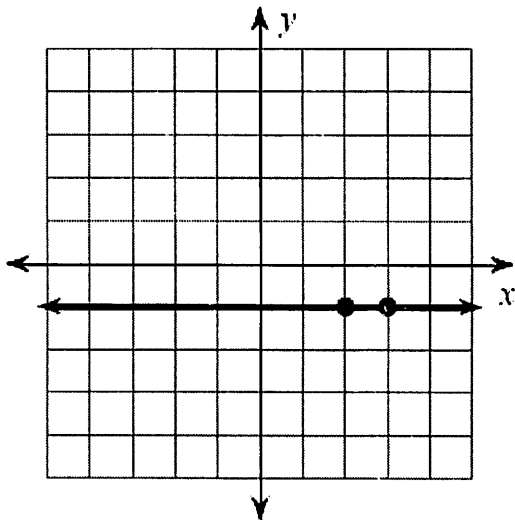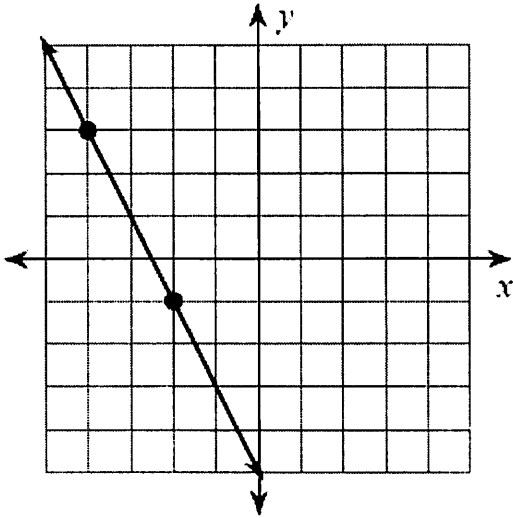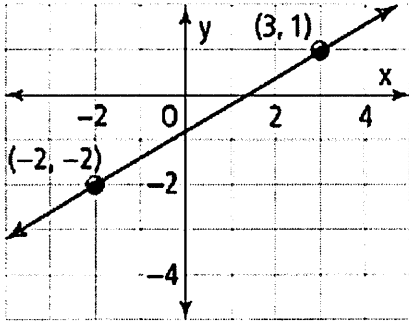

x	y
-4	3
2	0

+6   -3

$$\frac{\Delta y}{\Delta x} = \frac{\text{Move down 3 in the y direction}}{\text{Move to the right 6 in the x direction}} = \frac{-3}{6} = -\frac{1}{2}$$

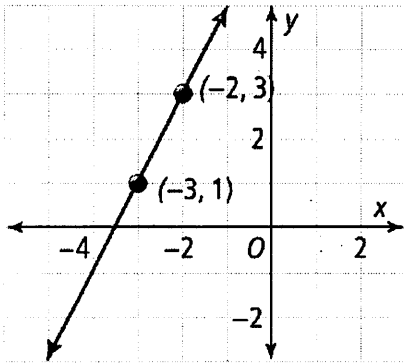$$\frac{\Delta y}{\Delta x} = \frac{-3}{6} = -\frac{1}{2}$$

Finding the slope of the line on a graph

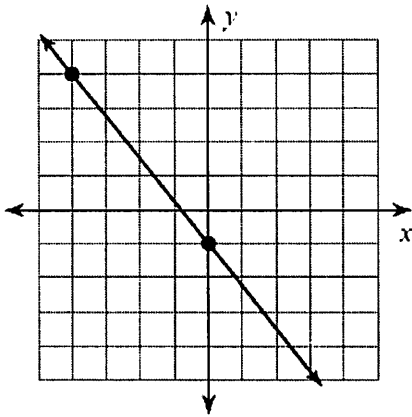Identify the slope of the line using the graph or a "itty-bitty" table.

I THINK I GOT IT!
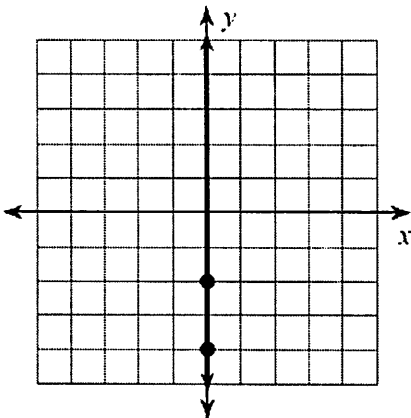
1. What is the slope of the line?

2. What is the slope of the line?

I GOT IT!

What is the slope of the line?

Answers: 1) $\dfrac{\Delta y}{\Delta x} = \dfrac{2}{1}$ 2) $\dfrac{\Delta y}{\Delta x} = \dfrac{-5}{4}$ 3) $\dfrac{\Delta y}{\Delta x} = \dfrac{2}{0}$ Can't divide by zero, so we say the slope is UNDEFINED.

Unit Linear Functions
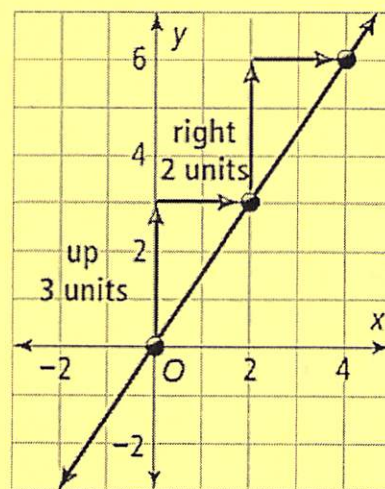
Day 2
The Slope of a Line (from a graph)

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$$= \frac{3}{2}$$

The slope of the line is $\frac{3}{2}$.
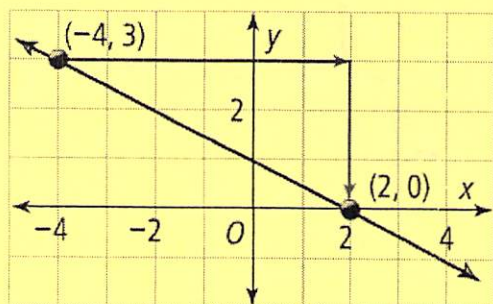
You can find the slope of the line by ...

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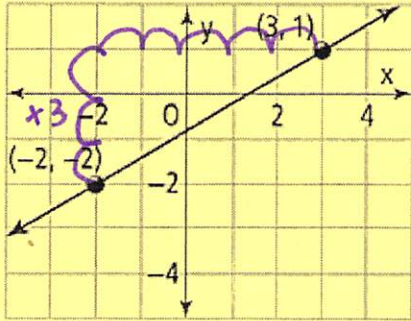
x	y
-4	3
2	0

+6 ( ) -3

$$\frac{\Delta y}{\Delta x} = \frac{\text{Move down 3 in the y direction}}{\text{Move to the right 6 in the x direction}} = \frac{-3}{6} = -\frac{1}{2}$$
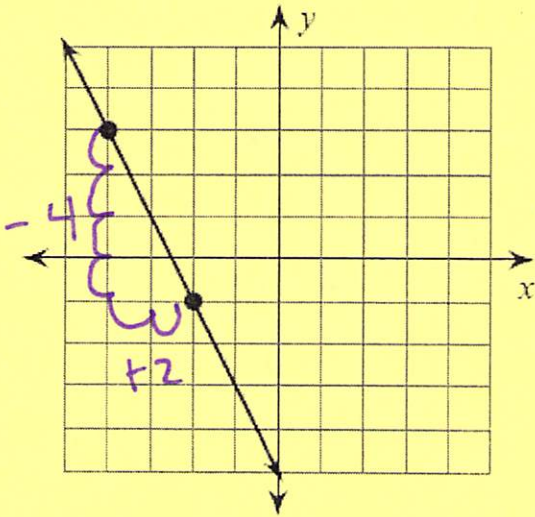
$$\frac{\Delta y}{\Delta x} = \frac{-3}{6} = -\frac{1}{2}$$
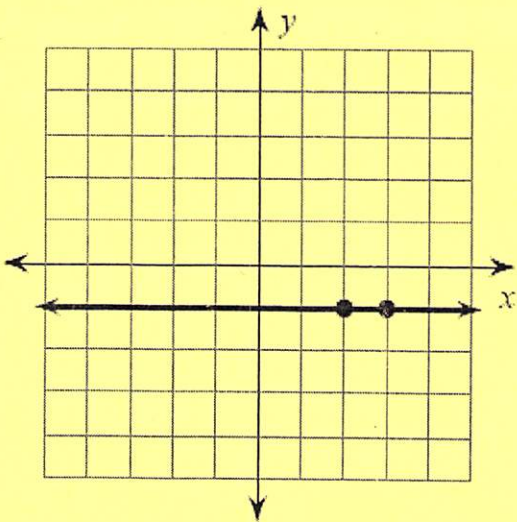
Finding the slope of the line on a graph

Identify the slope of the line using the graph or a "itty-bitty" table.

$$\frac{rise}{run} \rightarrow \frac{\Delta y}{\Delta x} = \frac{3}{5}$$

(3, 1)

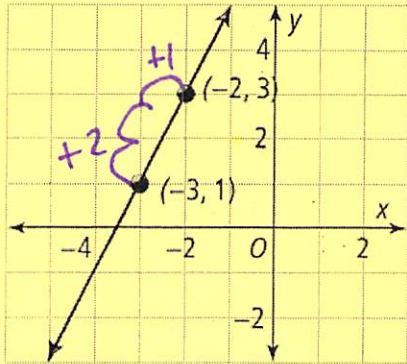×3 −2   (−2, −2)

$$\frac{rise}{run} \rightarrow \frac{\Delta y}{\Delta x} = \frac{-4}{2} = -2$$

−4   +2

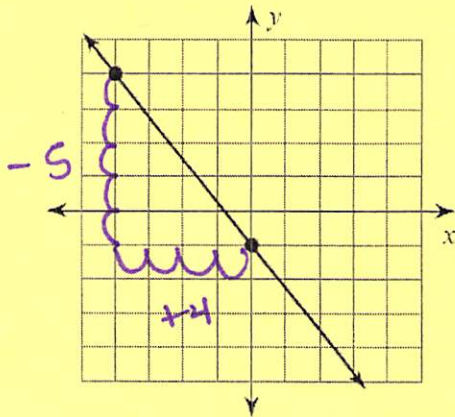$$\frac{rise}{run} \rightarrow \frac{\Delta y}{\Delta x} = \frac{0}{1} = 0$$

I THINK I GOT IT!

1. What is the slope of the line?

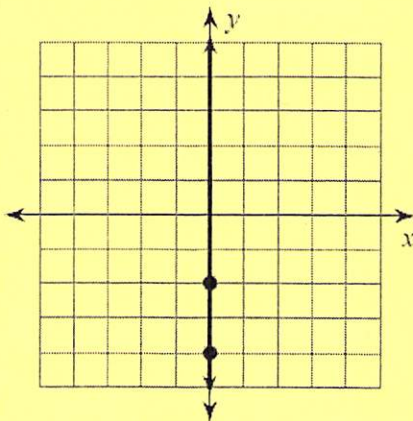$$\frac{rise}{run} \qquad \frac{\Delta y}{\Delta x} = \frac{2}{1} = 2$$

2. What is the slope of the line?

$$\frac{rise}{run} \qquad \frac{\Delta y}{\Delta x} = \frac{-5}{4} = -\frac{5}{4}$$

I GOT IT!

What is the slope of the line?

$$\frac{rise}{run} \qquad \frac{\Delta y}{\Delta x} = \frac{2}{0} \quad \leftarrow \text{Undefined slope}$$

Answers:1) $\frac{\Delta y}{\Delta x} = \frac{2}{1}$ 2) $\frac{\Delta y}{\Delta x} = \frac{-5}{4}$ 3) $\frac{\Delta y}{\Delta x} = \frac{2}{0}$ Can't divide by zero, so we say the slope is UNDEFINED.