

5.5 Slope

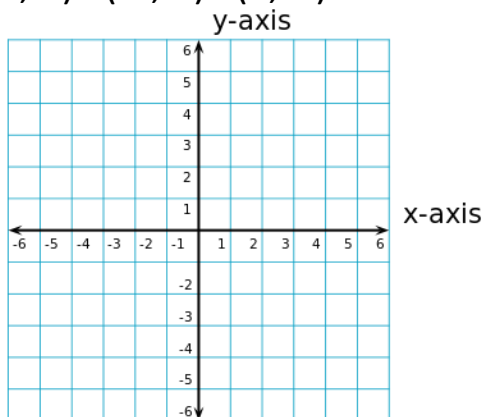
EQ: How do we find the slopes of lines and interpret the slopes as rates?

Let's review:

- Points on a graph are written as (x,y) . This is called an Ordered Pair.
- Why is an ordered pair called an ordered pair? Because **ORDER IS IMPORTANT!** If an ordered pair is written in a different order, it makes a different ordered pair.
- The ORIGIN is where the X axis and the Y axis intersect. It is located at the point $(0,0)$.
- The X value is called the x-coordinate. This number is graphed to the left \leftarrow or to the right \rightarrow of the origin.
- The Y value is called the y-coordinate. This number is graphed above \uparrow or below \downarrow the origin.

Let's practice GRAPHING some ordered pairs!

Graph the following points and label them with their ordered pair. $(1, 4)$ $(-2, 3)$ $(0,-4)$



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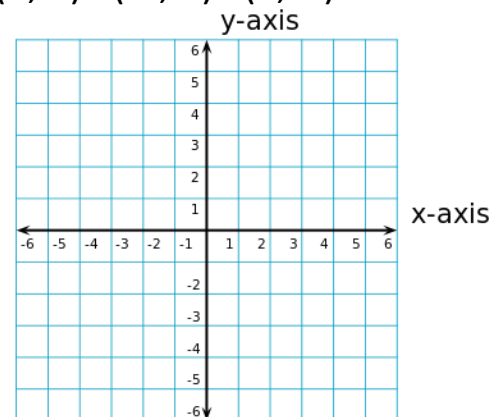
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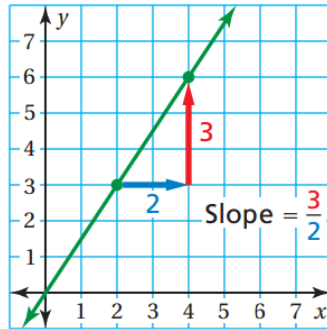
SLOPE-The rate of change between any two points on a line.

It is a measure of the **STEEPNESS of a line.**

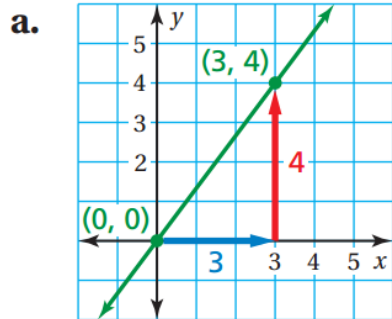
REMEMBER- a RATE is a RATIO!

To find the **SLOPE** of a line: find the RATIO of the **CHANGE in y** (vertical change) to the **CHANGE in x** (horizontal change).

$$\text{slope} = \frac{\text{change in } y}{\text{change in } x}$$



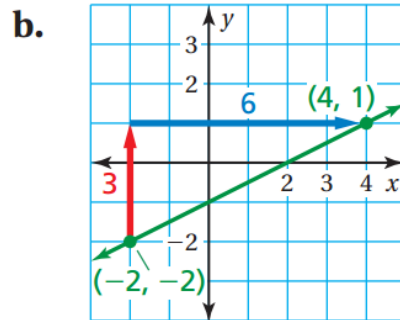
FINDING SLOPES-find the slope of each line.



$$\text{slope} = \frac{\text{change in } y}{\text{change in } x}$$

$$\text{slope} = \frac{4}{3}$$

The slope of the line is $\frac{4}{3}$



$$\text{slope} = \frac{\text{change in } y}{\text{change in } x}$$

$$\text{slope} = \frac{3}{6} = \frac{1}{2}$$

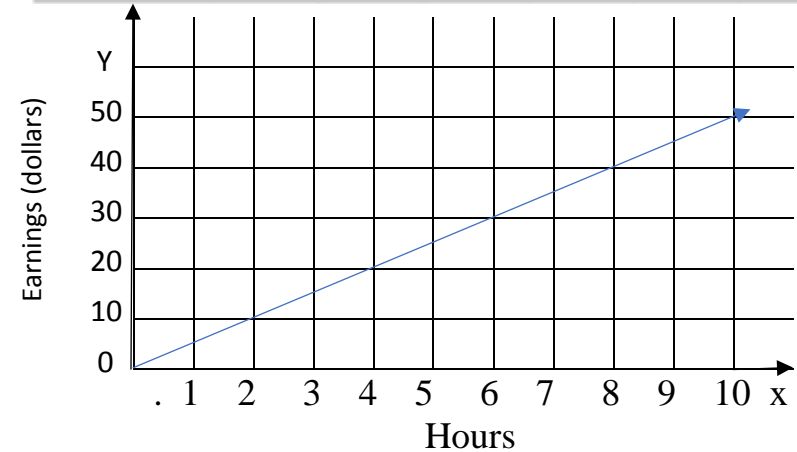
The slope of the line is $\frac{1}{2}$

INTERPRETING A SLOPE-

The table shows your earnings for babysitting.

- Graph the Data
- Find and interpret** the slope of the line through the points.

Hours, x	0	2	4	6	8	10
Earnings, y (dollars)	0	10	20	30	40	50



- Graph each set of data, label the points, and then draw a line through the points connecting them.
- Choose any two points to find the slope of the line.

$$\text{slope} = \frac{\text{change in } y}{\text{change in } x} \quad \text{slope} = \frac{20}{4} \begin{matrix} \leftarrow \text{dollars} \\ \leftarrow \text{hours} \end{matrix}$$

$$\text{slope} = 5$$

-The slope of the line represents the UNIT RATE

-The slope is 5. So, you earn \$5 per hour babysitting.

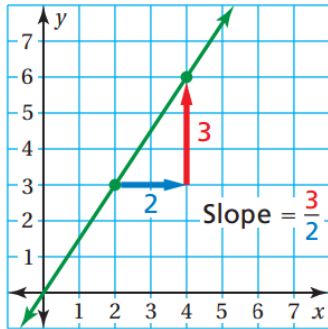
SLOPE-The rate of change between any two points on a line.

It is a measure of the _____.

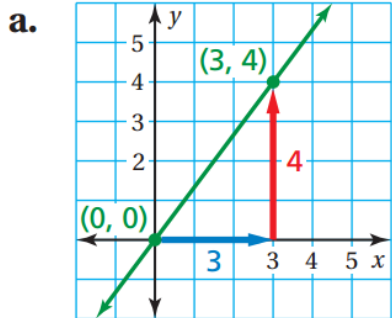
REMEMBER- a _____ is a _____!

To find the _____ of a line, find the **RATIO** of the **CHANGE in y** (vertical change) to the **CHANGE in x** (horizontal change).

$$\text{slope} = \frac{\text{change in } y}{\text{change in } x}$$



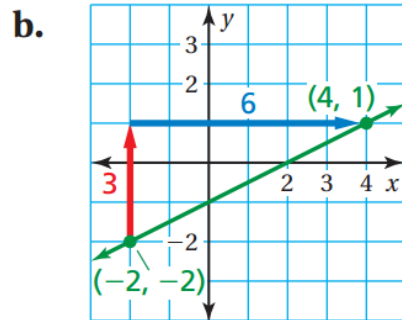
FINDING SLOPES-find the slope of each line.



$$\text{slope} = \frac{\text{change in } y}{\text{change in } x}$$

slope = _____

The slope of the line is _____



$$\text{slope} = \frac{\text{change in } y}{\text{change in } x}$$

slope = _____ = _____

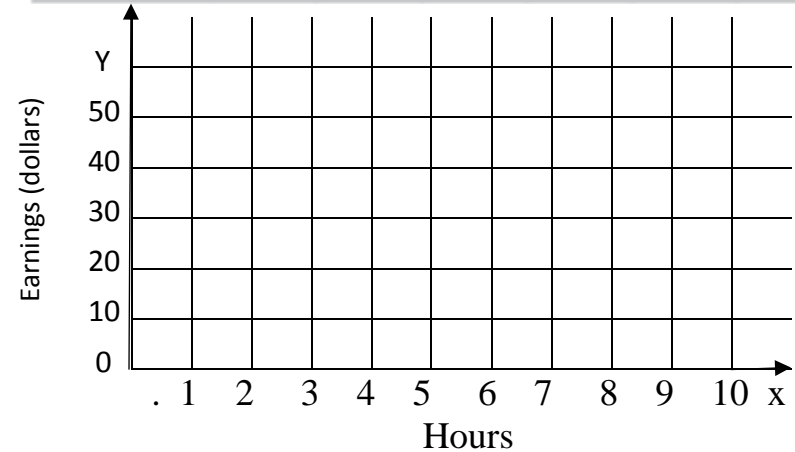
The slope of the line is _____

INTERPRETING A SLOPE-

The table shows your earnings for babysitting.

- c. Graph the Data
- d. **Find and interpret** the slope of the line through the points.

Hours, x	0	2	4	6	8	10
Earnings, y (dollars)	0	10	20	30	40	50



- c. Graph each set of data, label the points, and then draw a line through the points connecting them.
- d. Choose any two points to find the slope of the line.

FIND: slope = $\frac{\text{change in } y}{\text{change in } x}$ slope = $\frac{\text{--- dollars}}{\text{--- hours}}$

slope = _____

INTERPRET:

-The slope of the line represents the _____.

-The slope is _____. So, you earn \$_____ per _____ babysitting.