Tuesday, December 4, 2012

AGENDA:
- **TISK Problems/No MM**
- **Homework Check**
- **Lesson 11-2: Slope of a Line**
- **Homework: Finding the Slope of a Line worksheet**

TISK Problems
1) Solve for t: $A = P + Prt$

2) Solve for x: $\frac{x}{2} + \frac{x}{3} + \frac{x}{5} = 62$

3) Solve for m: $m^2 + 4 = 29$

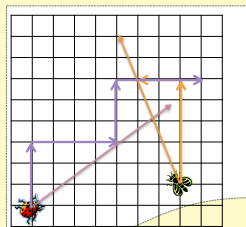## Homework Check

- We will check homework at the END of the lesson today.

A bug is crawling along a piece of paper.

How do we describe the bug's path?

He's traveling in a straight line!

How can we describe his line as opposed to another bug...?

The red bug climbs up 3 units for every 4 units he crawls to the right.

The green bug climbs up 5 units for every 2 units he crawls to the left.

The way they move is called the **SLOPE** of the line.

So, what do you know?

- Slope is...
  - The **rise** compared to the **run** of a line.

  - The **change in y** compared to the **change in x**.

  - How a line *moves*.

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Slope Equation

- The formula for slope of any line with points (x_1, y_1) and (x_2, y_2) is:

  $m =$

_____

Finding Slope

- Find the slope of a line that passes through the points (-3, 5) and (7, 6).
  $$x_1 \quad y_1 \qquad x_2 \quad y_2$$

$$m = \frac{y_1 - y_2}{x_1 - x_2} = \frac{-1}{-10} = \frac{1}{10}$$

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Header: 12/4/2012

Finding Slope

- Find the slope of a line that passes through the points (-8, -6) and (7, -9).
  $x_1 \quad y_1 \qquad x_2 \quad y_2$

$$m = \frac{y_1 - y_2}{x_1 - x_2} = \frac{3}{-15} = -\frac{1}{5}$$

Find the slope of the line.

1) Up = +
   Right = +
2) Down = -
   Left = -

9

8

$$m = \frac{8}{9}$$

-9   -8

$$m = \frac{-8}{-9} = \frac{8}{9}$$
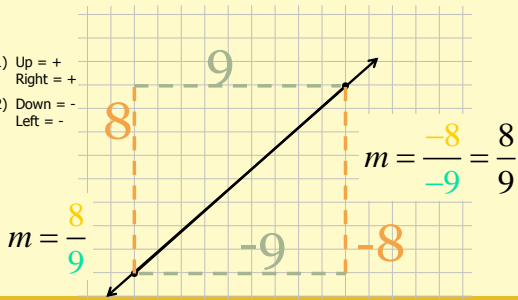
Find the slope of the line.

$$m = -\frac{2}{10} = -\frac{1}{5}$$

-2

10

3
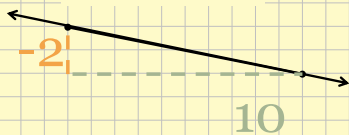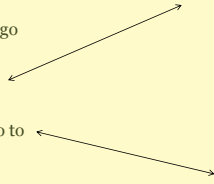
Classify Lines by Slope

- Positive Slope
  - These lines CLIMB as they go to the right.
  - $m > 0$
- Negative Slope
  - These lines FALL as they go to the right.
  - $m < 0$

Quick Look…

- What happens to the slope of a horizontal line?

- What about a vertical line?

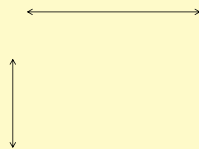$$m = \frac{0}{10} = 0$$

$$m = \frac{-4}{0} = undefined$$

Classify Lines by Slope

- Zero Slope
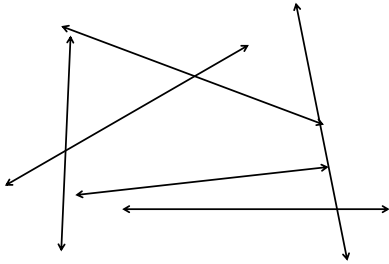 - These lines are horizontal
- No Slope
  - These lines are vertical

Tell whether each line has a positive, negative, undefined, or zero slope.

Homework Check