Lesson 4.1 Finding and Interpreting Slope

Find the Slope
(4, -7) (10, -9)

Sketch the points (4, -7) and (10, -9)
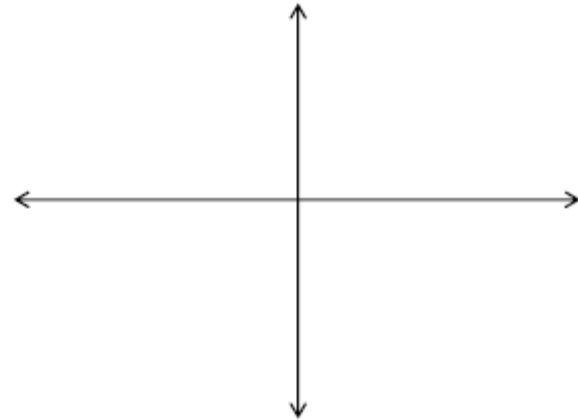
Solve an Equation Containing Fractions

$$\frac{a}{7} - \frac{5}{7} = \frac{6}{7}.$$

Write number in scientific notation
0.00985

Simplify Expression

$$5^{-2} \bullet 5^{2} =$$

Solve an Equation Containing Decimals
1.12 + 1.25y = 8.62

Solve & Check
7x − 10 = 5x + 12

Lesson 4.1 Finding and Interpreting Slope

Find the Slope
(4, -7) (10, -9)

$$\frac{-9-(-7)}{10-4}=\frac{-2}{6}=\frac{-1}{3}$$

Given two points:

(x_1, y_1) (x_2, y_2)

Slope Formula:
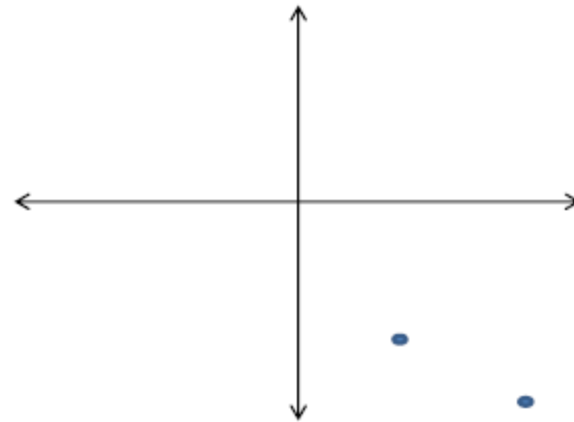
$$\frac{y_2-y_1}{x_2-x_1}$$

Paradise
Education Center
Soaring Above The Rest!

Sketch the points (4, -7) and (10, -9)

Solve an Equation Containing Fractions

$$\frac{a}{7}-\frac{5}{7}=\frac{6}{7}.$$

11

Write number in scientific notation
0.00985

9.85x 10 ^ -3

Simplify Expression

$$5^{-2} \cdot 5^{2} =$$

$$5^0 = 1$$

Solve an Equation Containing Decimals
1.12 + 1.25y = 8.62

6

Solve & Check
7x – 10 = 5x + 12
X=11

Lesson 4.1 Finding and Interpreting Slope (Day 2)

Objective

TSW find the slope of lines by

*interpreting table

*graphing

*using slope formula $= \dfrac{y_2 - y_1}{x_2 - x_1}$.

*using formula y=mx+b

▶ The graph of a linear equation in two variables is a line, and you can write the equation of the line in slope-intercept form.

BIG IDEA

Common Core State Standards

8EE 5 Graph proportional relationships, interpreting the unit rate as the slope of a graph.

8 EE 6 …derive the equation y=mx for a line through the equation y=mx+b for a line intercepting the vertical axis at b

- **Mathematical Practices** *2 Reason 4 Model Mathematics 5 Use tools 8 Express regularity in reasoning*

Lesson 4.1 Types of Slope (Day 2)

Step 1: Make sure every student has a piece of paper (you can give them colored paper or copy paper or they can use notebook paper!)

Step 2: Fold the paper hot dog style then fold it hamburger style (so there are 4 squares)
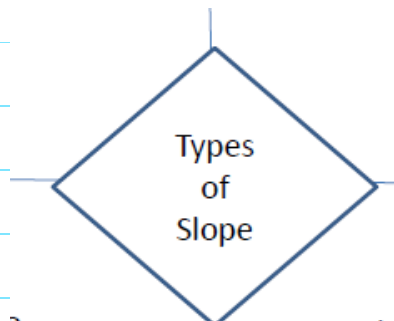
Step 3: Do not unfold the 4 squares! While folded, fold down the inside corner. (See picture 1 to the right). This will create a diamond in the middle of the squares when you open up the paper

Step 4: Unfold paper. Use a writing utensil to trace the diamond & the folds separating the 4 sections(as shown in picture 2).
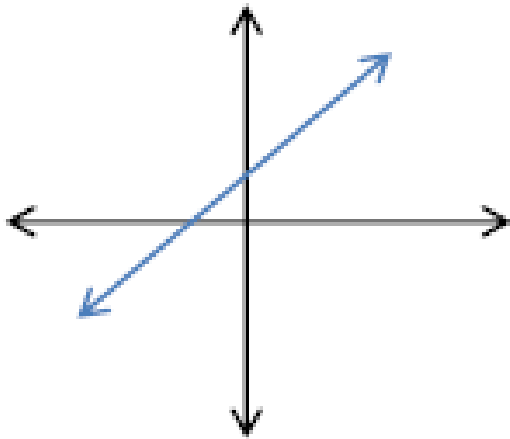
Picture 1

Picture 2

Types
of
Slope

Positive Slope

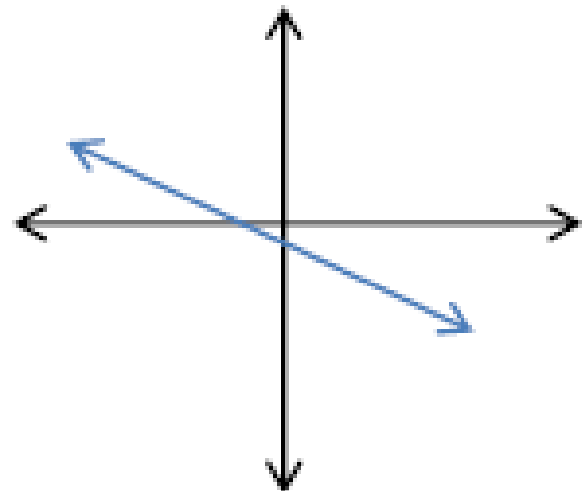-Lines with a positive slope slant up
(like going up a hill)

-

Types
of

Negative Slope

- Lines with a negative slope slant down
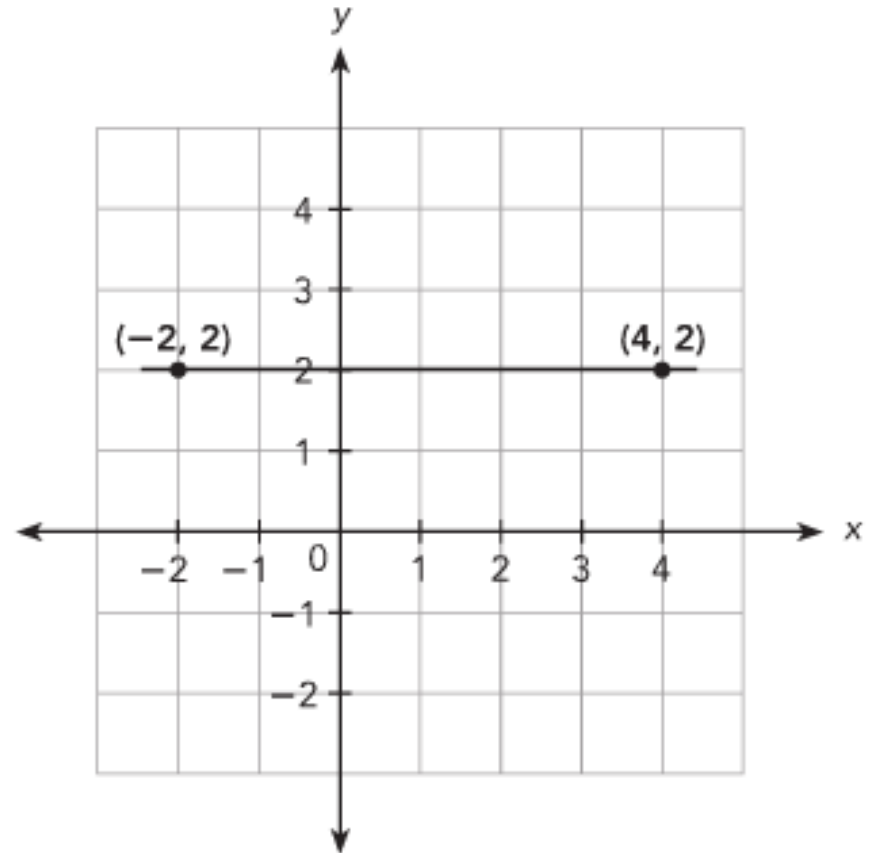(like going down a hill)

ypes
of

Lesson 4.1 Types of Slope (Day 2)

Find the slope of horizontal and vertical lines.

Find the slope of the line.

Use the points $(-2, 2)$ and $(4, 2)$:

$$\text{Slope} = \frac{\text{Rise}}{\text{Run}}$$

Lesson 4.1 Types of Slope (Day 2)
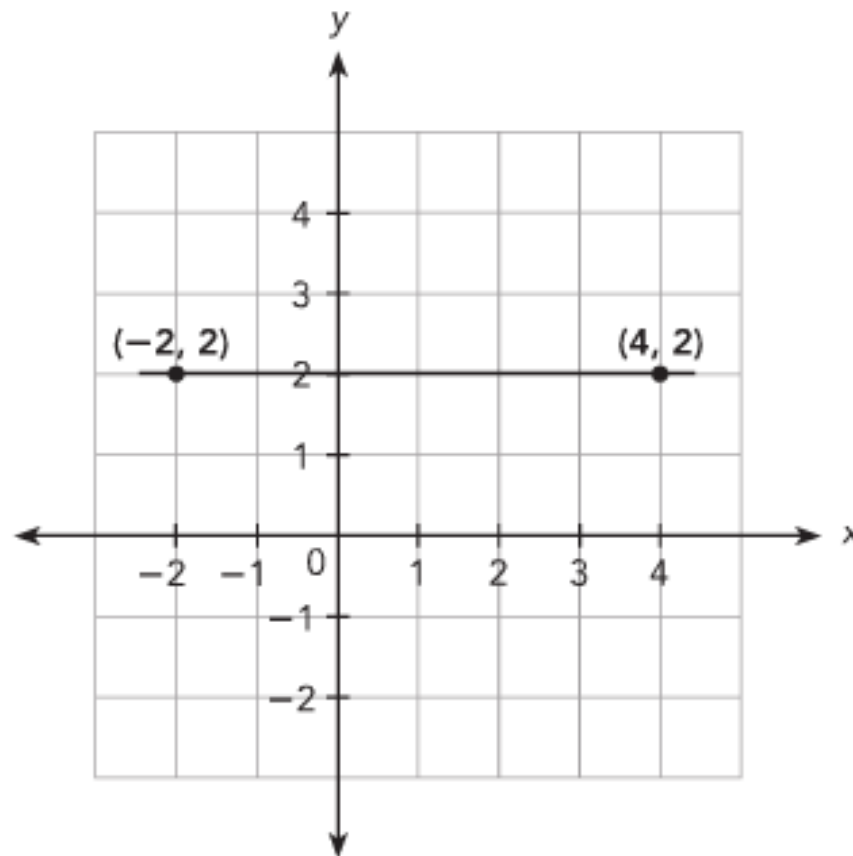
Find the slope of horizontal and vertical lines.

Find the slope of the line.

Solution

Use the points $(-2, 2)$ and $(4, 2)$:

$$\text{Slope} = \frac{\text{Rise}}{\text{Run}}$$

$$= \frac{2 - 2}{4 - (-2)}$$
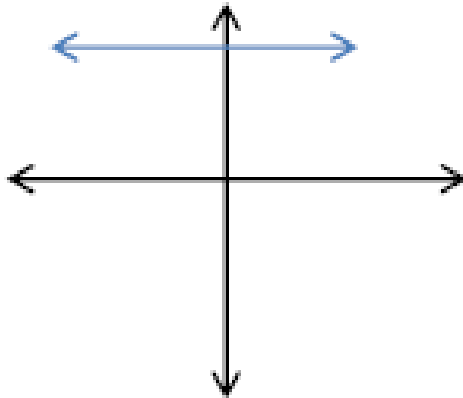
$$= \frac{0}{6}$$

$$= 0$$

The slope is 0.

Lesson 4.1 Types of Slope (Day 2)

Zero Slope

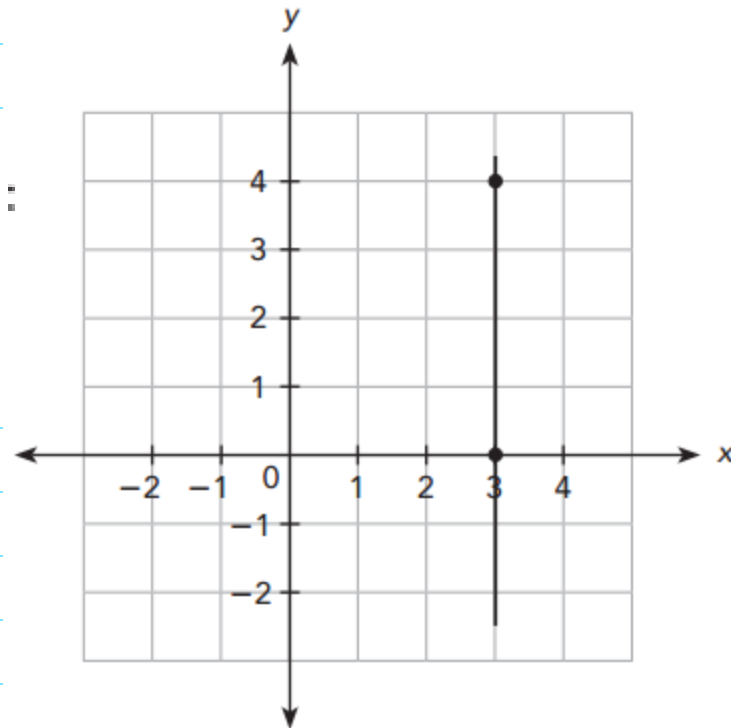-Lines with a slope of zero are horizontal

(They have zero slant!)

of
Slo[

←Zero

Lesson 4.1 Types of Slope (Day 2)

Find the slope of horizontal and vertical lines.

Use the points (   ) and (:

$$Slope = \frac{Rise}{Run}$$

Find the slope of horizontal and vertical lines.

Use the points (__?__, __?__) and (__?__, __?__): **3; 4; 3; 0**

$$\text{Slope} = \frac{\text{Rise}}{\text{Run}}$$

$$= \frac{?}{?} \quad \frac{0 - 4}{3 - 3}$$

$$= \frac{?}{?} \quad \frac{-4}{0}$$

$$= \underline{\quad?\quad} \quad \text{undefined}$$

The slope is __?__. **undefined**

For a vertical line, the horizontal change (run) from one point to another is 0. So, $\dfrac{\text{Rise}}{\text{Run}} = \dfrac{\text{Rise}}{0}$

= undefined.

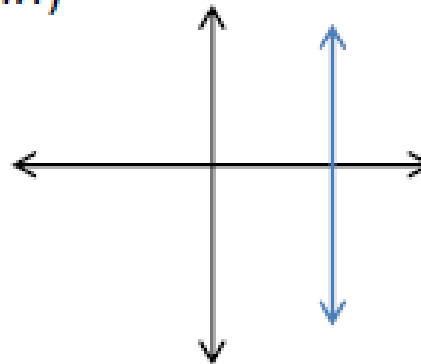You cannot divide by zero.

Lesson 4.1 Types of Slope (Day 2)

Types
of
Slope

Undefined Slope

-Lines that are vertical have no slope or undefined slope.

(They do not point from left to right at all!)

Undefined

Lesson 4.1 Finding and Interpreting Slope (Day 2)

Independent Practice #1-5

Challenge- Solve created equation/
"Pick a Snowflake
Create Word-toons

Practice 4.1 Day 2

Find the slope of each line using the points indicated.

Practice 4.1

Math Journal Jason says that the line in Graph B has a greater slope than the line in Graph A because it is steeper. What error is Jason making? Justify your answer.

Graph A   Graph B

Name:_____

Tuesday Homework
Solve For Linear Equation #1-18

Solve for each unknown.

$17 = 0 + f$	$(-25) + v = (-47)$
$a + (-19) = 3$	$s + 15 = 8$
$18 = m - (-15)$	$d + (-22) = (-44)$
$23 + p = 27$	$(-4) = 15 - y$
$6 = 17 - p$	$13 = (-12) - v$
$9 = 8 + z$	$12 = (-11) + w$
$(-18) + q = 5$	$a + 2 = (-11)$
$18 - x = 5$	$a + (-3) = 13$
$t - (-1) = (-5)$	$35 = b + 17$

✓ Lesson Check –#2 Write Slope of line using graph