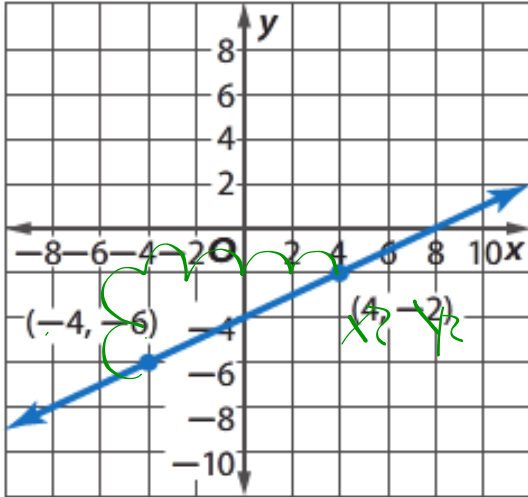


WARM-UP

Using the following graph, show how you could find the slope of the equation **TWO** different ways.



$$\frac{-2 - (-6)}{4 - (-4)} = \frac{4}{8} = \frac{1}{2}$$

rise
run

Clear Learning Target

You will be able to use slope and rate of change to solve real-world problems.

REAL-WORLD RATE OF CHANGE

Example #1: When driving up a hill, you rise 15 ft for every 1000 feet you drive forward. What is the slope of the road?



You Try!

A handicap ramp up to the front door of a school is 10 ft. at its highest point. The base of the ramp measures 28 feet. What is the slope of the ramp? **(HINT: Draw a picture and label it!)**

$$\frac{\text{rise}}{\text{run}} = \frac{10}{28} = \frac{5}{14}$$

Example #2: In 2004, there were 5545 women who participated in collegiate lacrosse. In 2008, there were 6830. What is the rate of change of women in collegiate sports over this time period?

$$\text{rate of change} = \frac{\text{change in } y}{\text{change in } x}$$

women vs. years

* "change over time"

* time = x-value

321 women per yr.

$$m = \frac{6830 - 5545}{2008 - 2004} = \frac{1285}{4} = 321.25 \text{ women/yr.}$$

You Try!

When a certain used car is two years old, it is valued at \$17,378. When it is 3 years old, its value has gone down to \$16,157. What is the rate of change of the price of this used car?

$$\frac{16,157 - 17,378}{3 - 2} = \frac{-1221}{1} = -1221 \text{ every year}$$