Warm Up:

Joe works anywhere from 25-40 hours a week. He earns $10.50 an hour. Write the domain and range of this function.

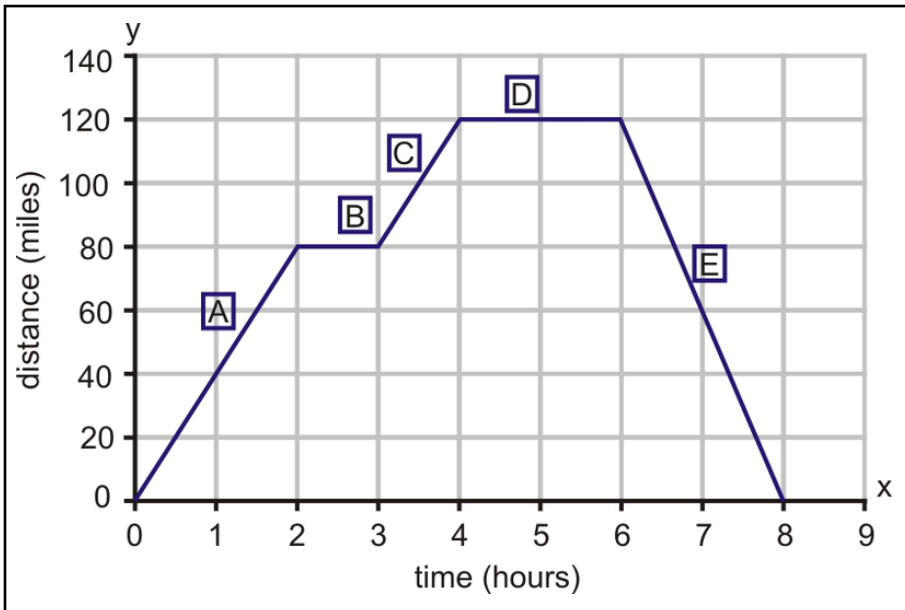
Domain: $25 \leq x \leq 40$

Range: $262.50 \leq y \leq 420$

$\$ = y$

$hrs = x$

Quiz



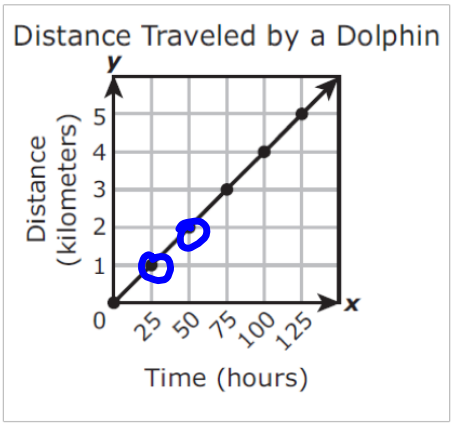
What is happening during each interval on the graph?

Rate of Change

a ratio of change in y over the change in x

$$\frac{\text{Change in } y}{\text{Change in } x} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

(x_1, y_1) (x_2, y_2)



Independent Variable: hrs

Dependent Variable: KM

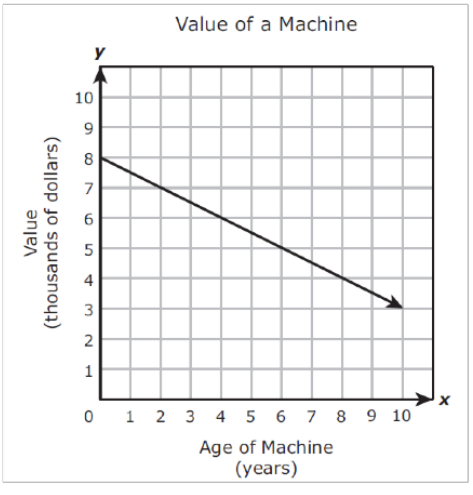
x	y
25	1
50	2

25 ↓ 1 ↓

rate of change = $\frac{\Delta \text{ dep.}}{\Delta \text{ indep.}} = \frac{y}{x} = \frac{1}{25} = \frac{4}{100} = .04 \frac{KM}{hr}$

Interpret this rate of change in context of the graph.

speed dolphin is swimming



Independent Variable: age

Dependent Variable: value

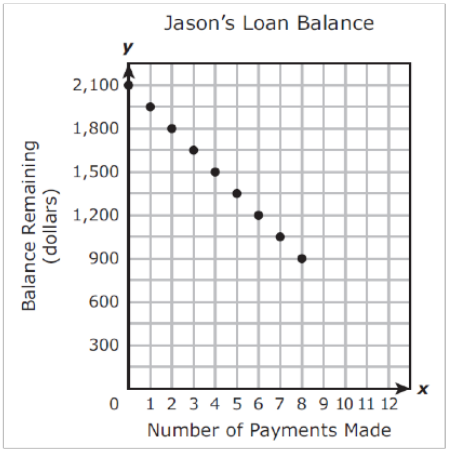
x	y
0	8
4	6

4 ↓ -2 ↓

rate of change = $\frac{\Delta \text{ dep.}}{\Delta \text{ indep.}} = \frac{8-6}{0-4} = \frac{-2}{-4} = -\frac{1}{2}$ thousand $ / year

Interpret this rate of change in context of the graph.

rate machine is losing value



Independent Variable: # payments

Dependent Variable: balance

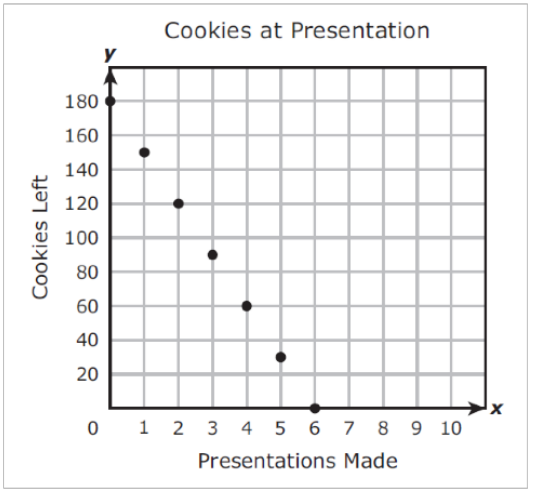
x	y
8	900
6	1200

-2 ↓ ↓ -300

rate of change $= \frac{\Delta \text{ dep.}}{\Delta \text{ indep.}} = \frac{900-1200}{8-6} = \frac{-300}{2} = -150$ $/payment

Interpret this rate of change in context of the graph.

how much is paid each payment



Independent Variable:

Dependent Variable:

x	y

rate of change $= \frac{\Delta \text{ dep.}}{\Delta \text{ indep.}} = \_\_\_\_\_ = \_\_\_\_\_$

Interpret this rate of change in context of the graph.

_____

October 10, 2019

Independent Variable: Dependent Variable:

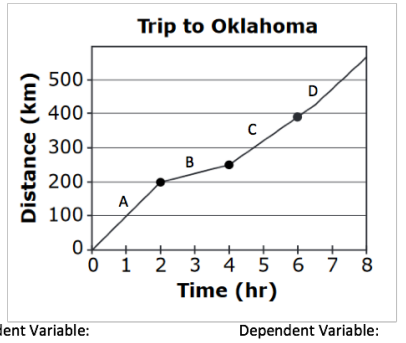
Domain: Range:

Between what two times is the cart moving the fastest? What is the rate of change during this time period?

Between what two times is the cart not moving? What is the rate of change during this time period?

What is the rate of change between 7.0 seconds and 12.0 seconds?

In the context of this graph, what does it mean for a rate of change to be positive or negative?



Independent Variable: Dependent Variable:

Domain: Range:

During which segment of the trip does it appear that the car is traveling the fastest? How can you tell?

During which segment of the trip does it appear that the car is traveling the slowest? How can you tell?

Calculate the Rate of Change of Each Separate Segment

x	y

Segment A Rate of Change	Segment B Rate of Change
Segment C Rate of Change	Segment D Rate of Change

October 10, 2019