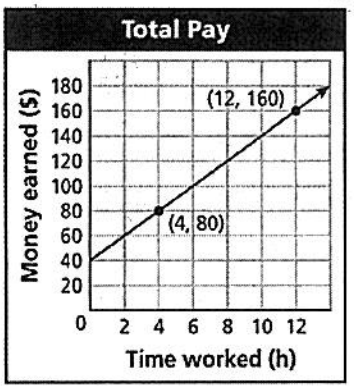
Algebra HW #

For each graph below, calculate the rate of change and explain its meaning.

1)



(12, 160) (4, 80)

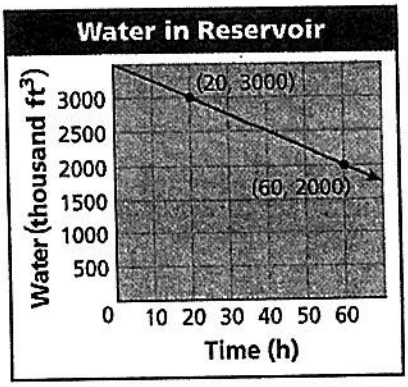
$\frac{\Delta y}{\Delta x} = \frac{160-80}{12-4}$

$= \frac{80}{8}$

$= \frac{10}{1}$ $\frac{\$}{hr}$

\$10 is earned for every hour worked

2)



$\frac{\Delta y}{\Delta x} = \frac{\text{water (thousand ft}^3\text{)}}{\text{number of hours}}$

$\frac{2000-3000}{60-20} \rightarrow \frac{-1000}{40}$

$\boxed{\frac{-25}{1}}$

25,000 ft³ of water leaves the reservoir every hour

3) Liam, the terrible toddler, was playing with the bathtub faucet when no one was looking. After two minutes, he had filled the tub with 12 gallons of water and after 4 minutes, the tub was filled with 20 gallons of water. Calculate the average rate at which water was entering the bathtub from 2 to 4 minutes.

(2, 12) (4, 20) ← minutes, gallons

$\frac{\Delta y}{\Delta x} = \frac{\text{gallons of water}}{\text{number of minutes}} \rightarrow \frac{12-20}{2-4}$

$\rightarrow \frac{-8}{-2}$

$\rightarrow \frac{4}{1}$

4 gallons of water enter the bathtub every minute