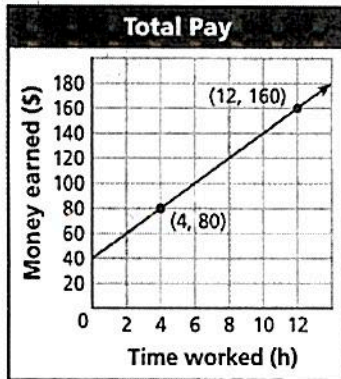


For each graph below, calculate the rate of change and explain its meaning.

1)

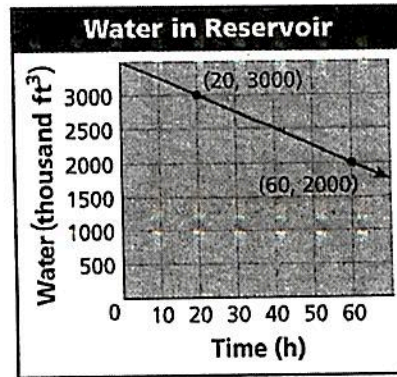


$(12, 160)$   $(4, 80)$

$$\begin{aligned} \frac{\Delta y}{\Delta x} &= \frac{160 - 80}{12 - 4} \\ &= \frac{80}{8} \\ &= \frac{10}{1} \text{ \$} \\ &= 10 \text{ hr} \end{aligned}$$

\$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 ft<sup>3</sup> of  
water leaves  
the reservoir  
every  
hour

3) Liam, the terrible toddler, was playing with the bathtub faucet when no one was looking. After every 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.

minutes ← (2, 12)      gallons ← (4, 20)

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

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

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

4 gallons of water enter the bathtub every minute