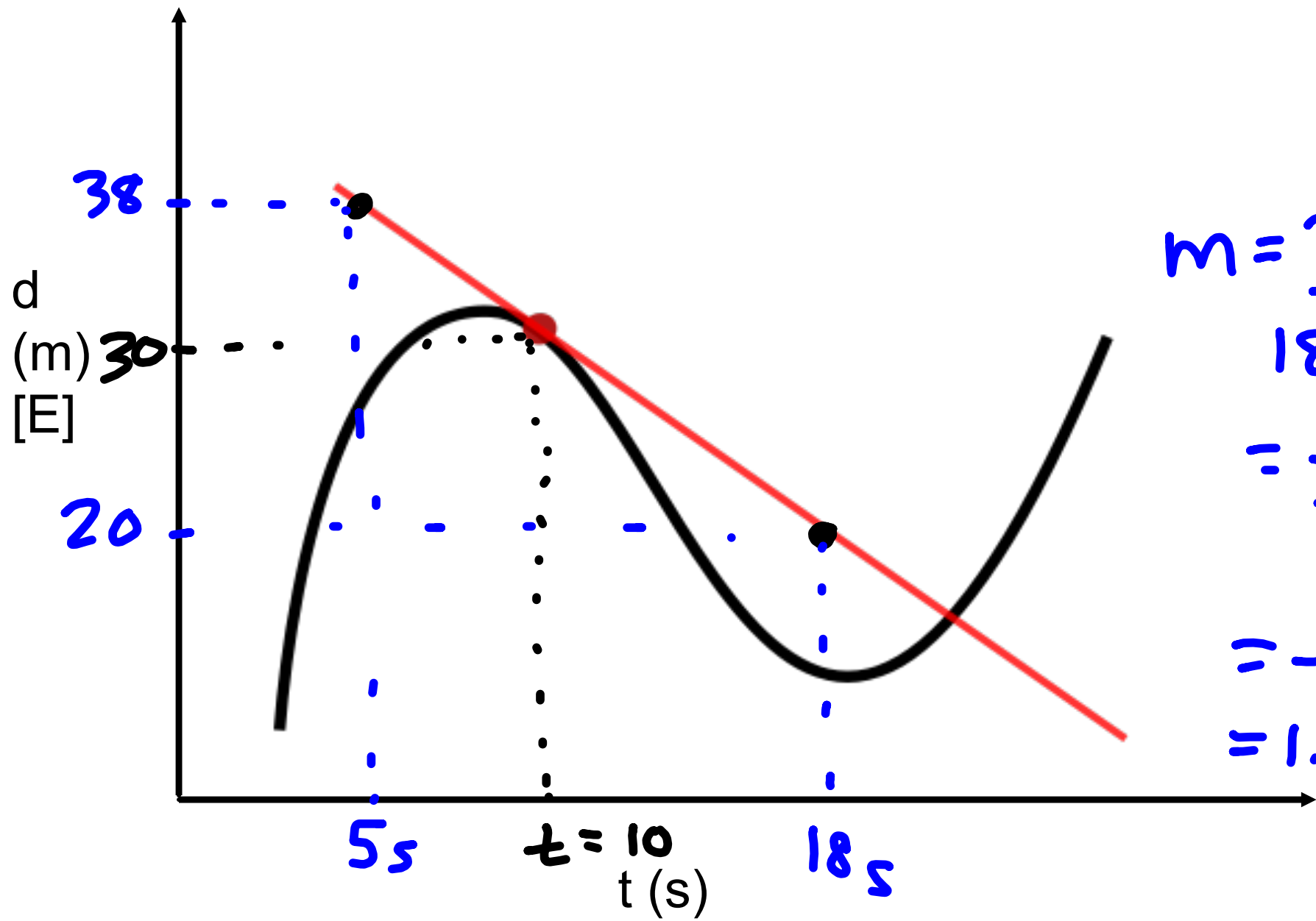


## Finding Instantaneous Speed/Velocity

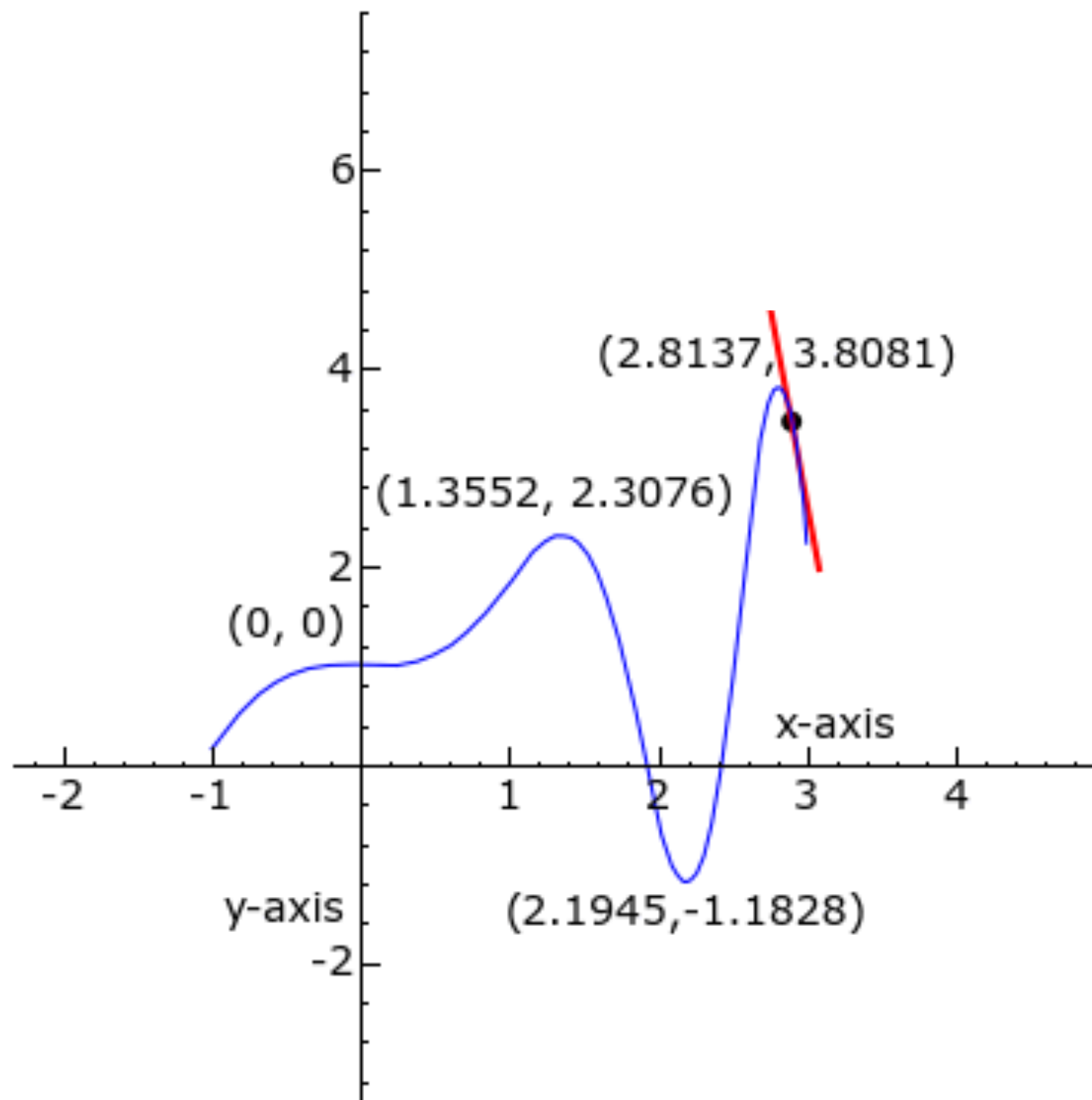
**instantaneous = at one point only**

**tangent = a line on a graph that touches only one point of the curve**

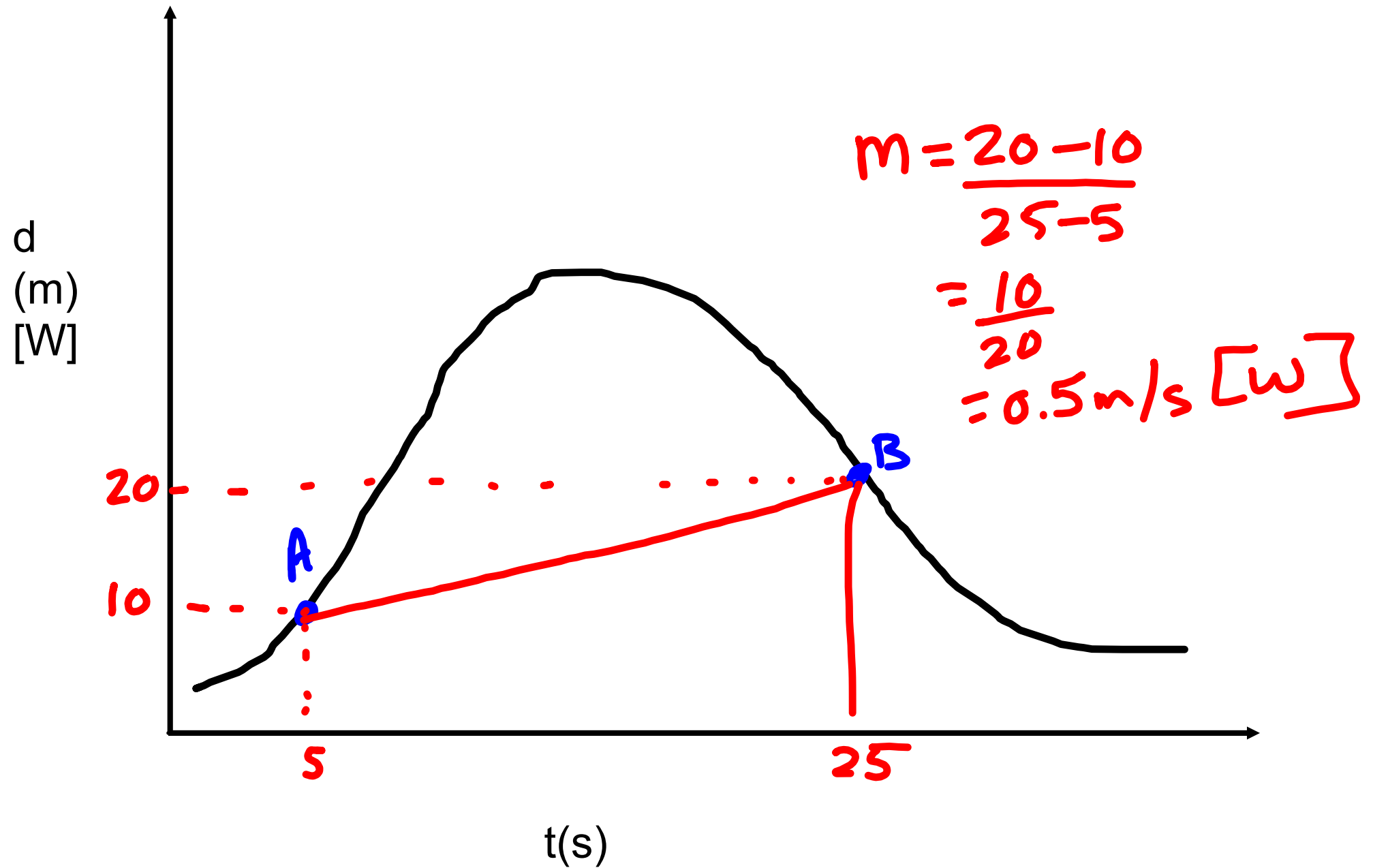
**For straight line segments ---> just find the slope of the line**  
**For curves, draw a tangent to the curve and find its slope**



$$\begin{aligned}
 m &= \frac{20 - 38}{18 - 5} \\
 &= \frac{-18}{13} \\
 &= -1.38\text{ m/s} \\
 &= 1.38\text{ m/s} \quad [\omega]
 \end{aligned}$$



To find the average velocity between two points, find the slope of the line joining those two points.

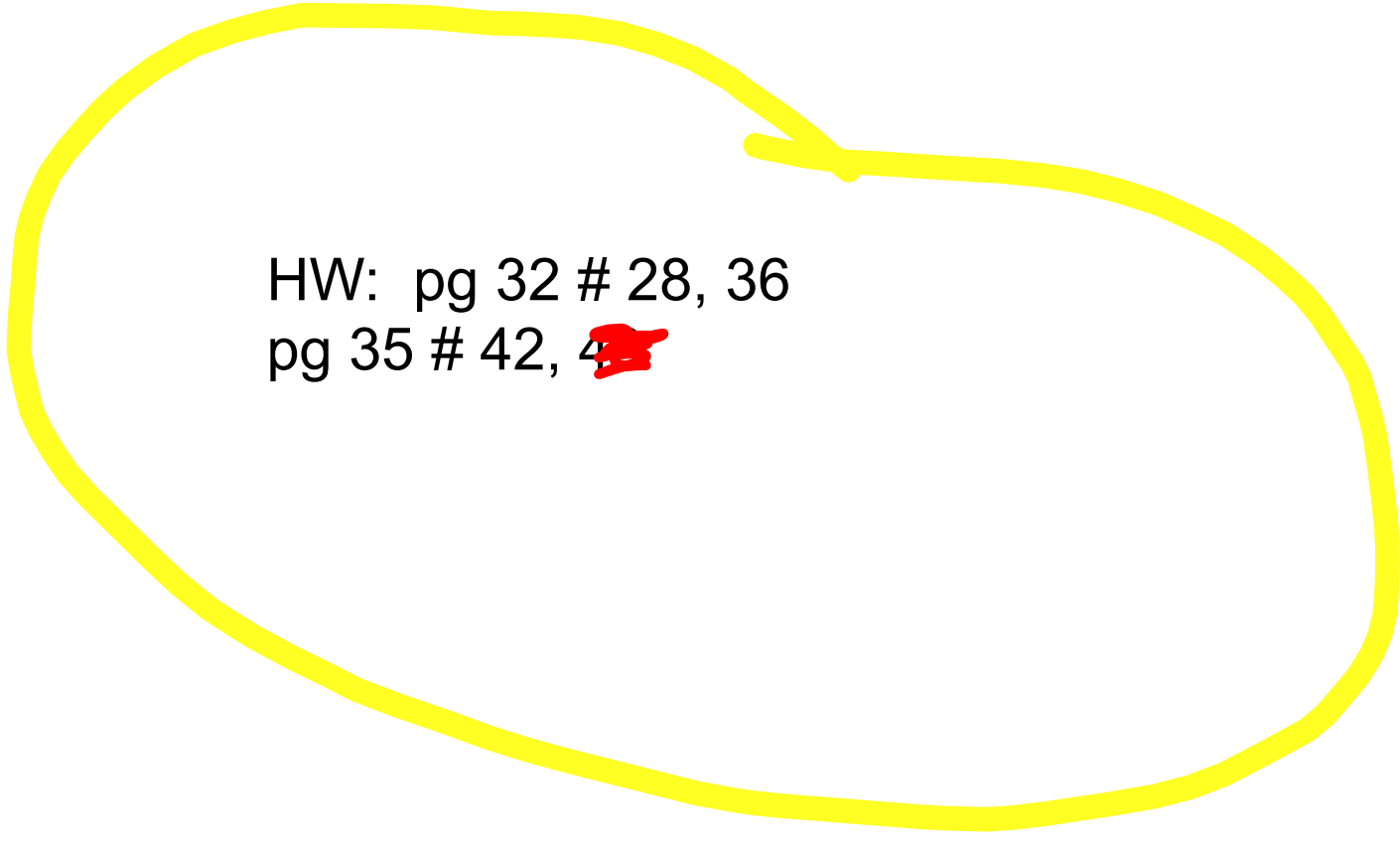


Example # 1 A tidal wave travelling at an average velocity of 35 m/s [E] is presently 140 km [W] of Hawaii. How long will it take before it hits Hawaii? Tsunami

$$v = 35 \text{ m/s [E]} \times 3.6 = 126 \text{ km/h [E]}$$



$$\begin{aligned} v &= \frac{d}{t} \\ t &= \frac{d}{v} \\ &= \frac{140}{126} \\ &= 1.1 \text{ hr} \end{aligned}$$



HW: pg 32 # 28, 36  
pg 35 # 42, ~~43~~