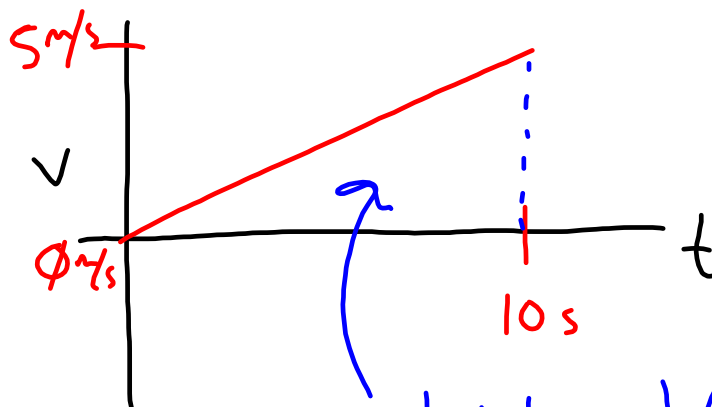


AREA UNDER GRAPH

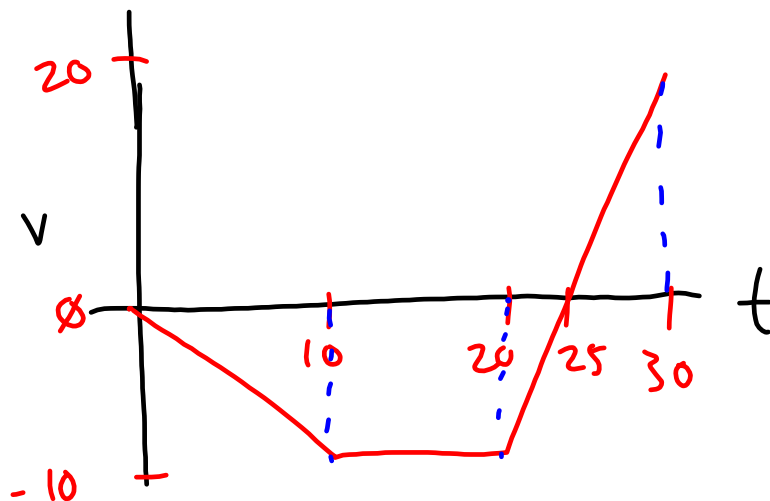


Area between
a function and
x-axis

$$\frac{1}{2}bh = \frac{1}{2}(10s)(5\text{ m/s})$$

$$= 25\text{ m}$$

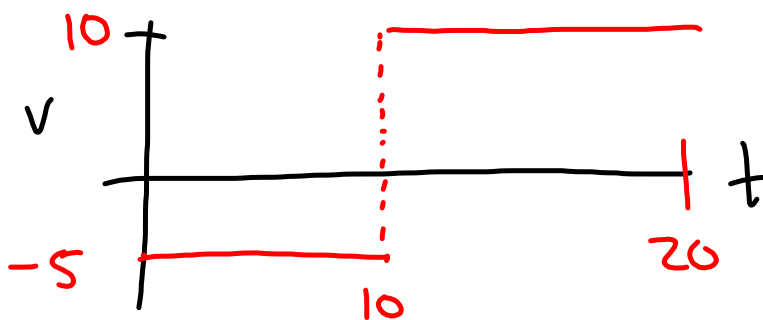
This is displacement!



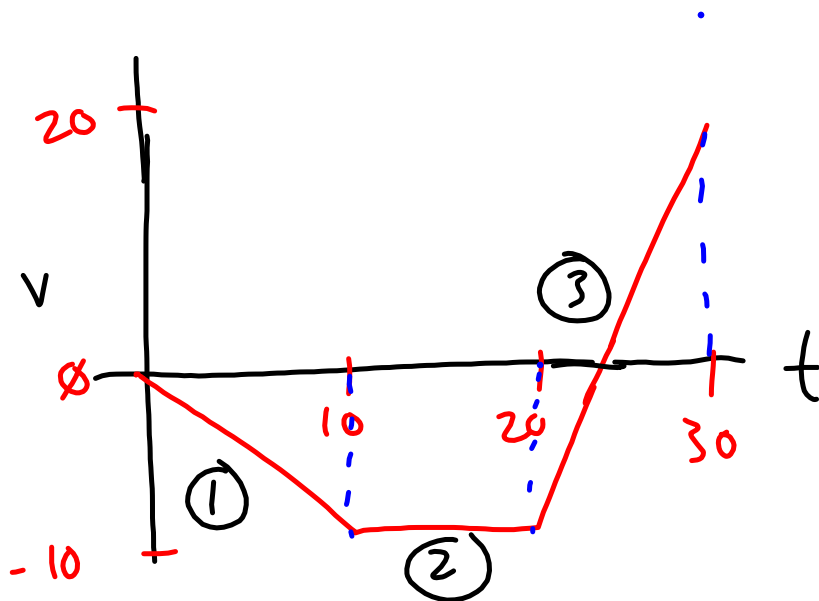
$$\Delta x = \frac{1}{2}(10s)(-10\text{ m/s}) + (10s)(-10\text{ m/s}) + \frac{1}{2}(5s)(-10\text{ m/s})$$

$$+ \frac{1}{2}(5s)(20\text{ m/s})$$

$$= -125\text{ m}$$



$$\begin{aligned}\Delta x &= (10 \text{ s})(-5 \text{ m/s}) + (10 \text{ s})(10 \text{ m/s}) \\ &= 50 \text{ m}\end{aligned}$$



What the acceleration during each interval? Slopes!

$$\textcircled{1} \quad \bar{a}_1 = \frac{\bar{v}_f - \bar{v}_i}{t_f - t_i} = -1 \text{ m/s}^2$$

$$\textcircled{2} \quad \bar{a}_2 = 0 \text{ m/s}^2$$

$$\textcircled{3} \quad \bar{a}_3 = \frac{\bar{v}_f - \bar{v}_i}{t_f - t_i} = \frac{20 \text{ m/s} - (-10 \text{ m/s})}{30 \text{ s} - 20 \text{ s}} = 3 \text{ m/s}^2$$

