5) If $v_0 = 2\ m/s$ and $a = 2\ m/s^2$, how far does it travel in 6 seconds?

$$x = x_0 + v_0 t + \frac{1}{2} a t^2$$

$$= 0 + (2\ m/s)(6s) + \frac{1}{2}(2\ m/s^2)(6s)^2$$

$$= 12m + 36m = \boxed{48 \text{ meters}}$$