PROB. 11-34

$X_f - X_0 = 220^m$, $t = 10^s$, $a = -0.6 \frac{m}{s^2}$ = CONSTANT

FIND V_0, V_f AND X TRAVELED IN FIRST 1.5^s

$$X = X_0 + V_0 t + \frac{1}{2} a t^2$$

$$V_0 = \frac{(X - X_0) - \frac{1}{2} a t^2}{t} = \frac{(X - X_0)}{t} - \frac{1}{2} a t$$

$$V_0 = \frac{(220^m)}{(10^s)} - \frac{1}{2}\left(-0.6 \frac{m}{s^2}\right)(10^s) = 25 \frac{m}{s}$$

$$V^2 = V_0^2 + 2a(X - X_0)$$

$$V_f = \sqrt{V_0^2 + 2a(X - X_0)}$$

$$V_f = \sqrt{\left(25 \frac{m}{s}\right)^2 + 2\left(-0.6 \frac{m}{s^2}\right)(220^m)} = 19.0 \frac{m}{s}$$

$$X = X_0 + V_0 t + \frac{1}{2} a t^2$$

$$X = (0) + \left(25 \frac{m}{s}\right)(1.5^s) + \frac{1}{2}\left(-0.6 \frac{m}{s^2}\right)(1.5^s)^2 = 36.8^m$$