$$a = \frac{dv}{dt}$$

$$v_f = v_i + at$$

(4) $a = -Bt$ $\quad V(8) = 0.00\ \frac{m}{s}$

$$\frac{m}{s^{\cancel{3}2}} \cdot \frac{s^{\cancel{3}}}{1} = \frac{m}{s^2}$$

$$\int -Bt\, dt \rightarrow -\frac{Bt^2}{2} + C$$

$C = 20$

$$V(t) = \frac{-Bt^2}{2} + 20$$

$$0 = \frac{-B(8)^2}{2} + 20$$

$$-20 = \frac{-B(64)}{2}$$

$$-20 = -B(32)$$

$$B = 0.625 \frac{M}{S^3}$$

$$V(t) = \frac{-Bt^2}{2} + 20$$

$$X(t) = \frac{-Bt^3}{6} + \frac{20t}{1}$$

$$X(8) = \frac{-B(8)^3}{6} + 20(8)$$

$$X(8) = 107\ m$$