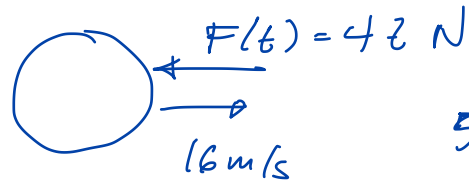


UBC-DYN-17-048 (Impulse Pre-lab)

$$F(t) = 4t \text{ N}$$



5 sec. to stop

$$mv_i + \int_0^5 -4t \, dt = 0$$

$$mv_i + \left(-4 \frac{t^2}{2}\right) \Big|_0^5 = 0$$

$$\int t \, dt = \frac{t^2}{2}$$

$$mv_i - 50 = 0$$

$$m = \frac{50 \text{ N}\cdot\text{s}}{16 \text{ m/s}} = 3.125 \text{ kg} \quad (\text{B})$$