



momentum gained from impulse is:

$$|\vec{P}| = |\vec{F}| \Delta t = 10 \text{ kg m/s}$$

We know that

$$|\vec{P}| = (2m) v \Rightarrow v = \frac{10}{2 \cdot 3} = \frac{5}{3} = \underline{\underline{1.667 \text{ m/s}}}$$

Angular velocity:

$$I_F \omega + \int_0^{t_2} M_F dt = 0$$

$$I_F = 2m b^2 = 2(3)(0.5)^2 = \frac{3}{2} = 1.5 \text{ kg m}^2$$

$$M_F = (20)(0.5) = 10 \text{ Nm}$$

$$\omega = \frac{M_F \Delta t}{I} = \frac{10 \cdot 0.5}{1.5} = \frac{10}{3} = 3.333 \text{ rad/s}$$