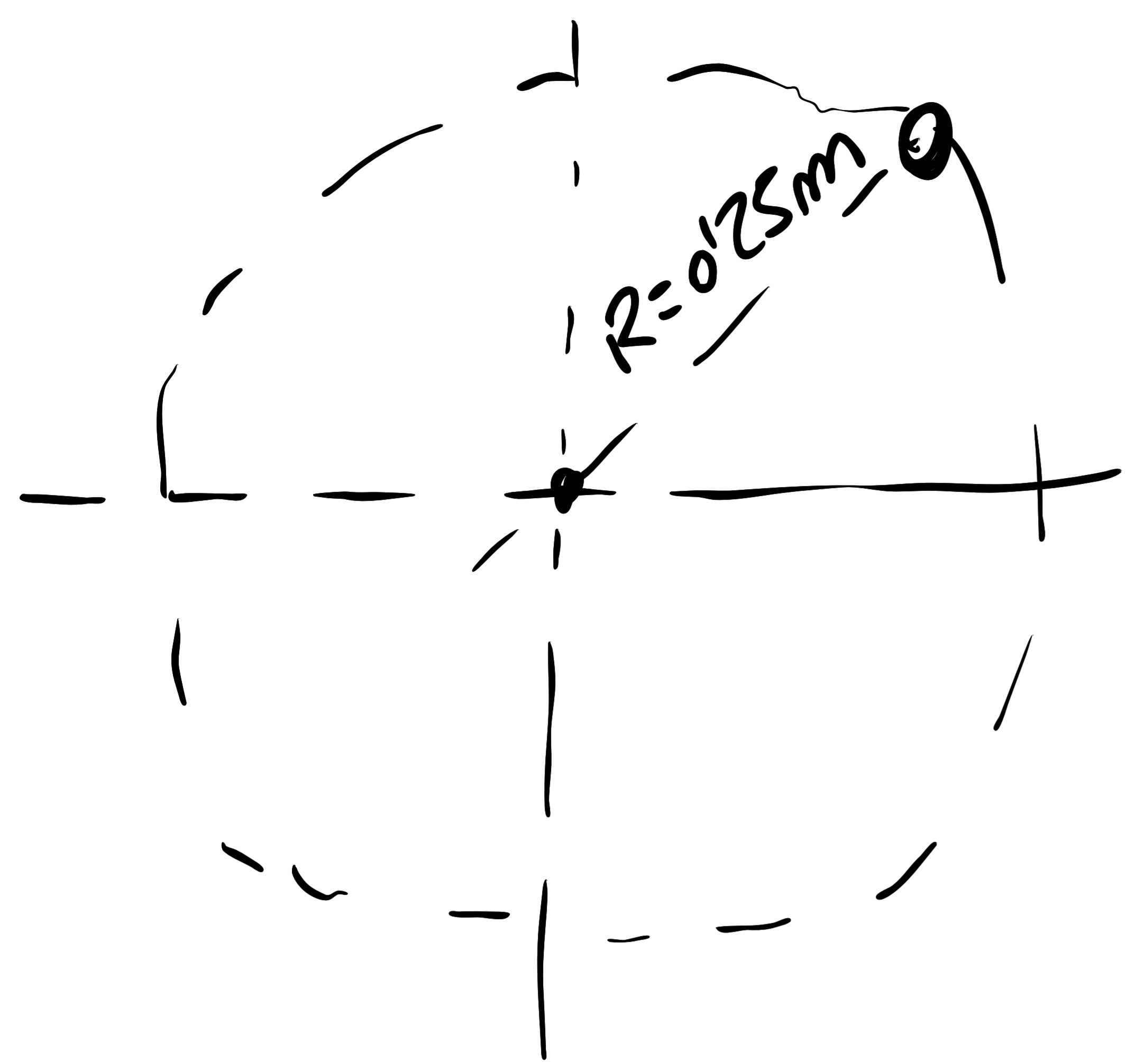


17°) (p. 80)



$$\omega = 800 \frac{\text{rev}}{\text{min}} \cdot \frac{1 \text{ min}}{60 \text{ s}} \cdot \frac{2\pi \text{ rad}}{1 \text{ rev}}$$

$$\omega = \frac{80}{3} \pi \text{ rad/s}$$

$$v = \omega \cdot R = \left(\frac{80}{3} \pi \frac{\text{rad}}{\text{s}} \right) \cdot (0.25 \text{ m})$$

$$v = \frac{20}{3} \pi \text{ m/s}$$

b)

$$a_n \equiv a_c = \frac{v^2}{R} = \frac{\left(\frac{20}{3} \pi \frac{\text{m}}{\text{s}} \right)^2}{(0.25 \text{ m})} = 1754 \frac{1}{6} \text{ m/s}^2$$

c)

$$F_c = m \cdot a_c = (5 \text{ kg}) \left(1754 \frac{1}{6} \frac{\text{m}}{\text{s}^2} \right) = \underline{\underline{8773 \text{ N}}}$$

