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$$s = 6.1 \text{ m/s}$$

$$r = 10 \text{ m}$$

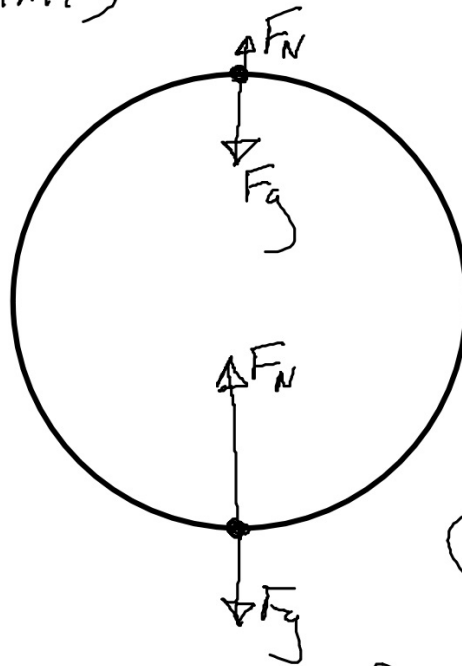
$$T = ?$$

$$s = \frac{2\pi r}{T}$$

$$T = \frac{2\pi r}{s}$$

$$= \frac{2\pi(10)}{6.1}$$

$$T = 10.3 \text{ s}$$



$$m = 80 \text{ kg}$$

$$F_N = ?$$

$$\Sigma F_c = ma_c$$

$$F_g - F_N = \frac{ms^2}{r}$$

$$784 - F_N = \frac{80(6.1)^2}{10}$$

$$\text{top: } F_N = 486 \text{ N}$$

$$F_N - F_g = \frac{ms^2}{r}$$

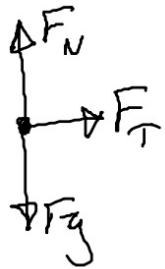
$$F_N = mg + \frac{ms^2}{r} = 784 + \frac{80(6.1)^2}{10} = 1080 \text{ N}$$

bottom

57.

$S=?$

$$\Sigma F_c = ma_c$$



$$F_T = \frac{mS^2}{r}$$

$$Mg = \frac{mS^2}{r}$$

$$Mgr = mS^2$$

$$F_T - F_g = may$$

$$F_T = Mg$$

$$\sqrt{\frac{Mgr}{m}} = S = \sqrt{\frac{(2.5)(9.8)(0.2)}{1.5}}$$

$$S = 1.81 \text{ m/s}$$