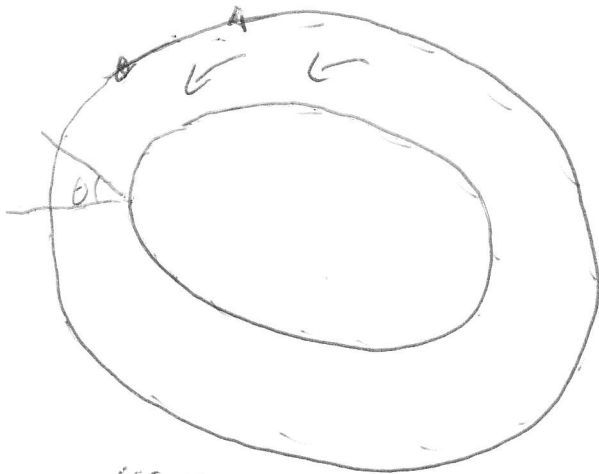


radius: $500 \text{ ft} = 500 \text{ ft} \left(\frac{\text{mi}}{5280 \text{ ft}} \right) \approx 0.095 \text{ mi}$

velocity: $60 \frac{\text{mi}}{\text{h}}$



car is going counter-clockwise

$$a = \frac{v^2}{R} \quad F = ma$$

$$\sum F_y = F_n - mg \cos \theta = 0$$

$$F_n = mg \cos \theta$$

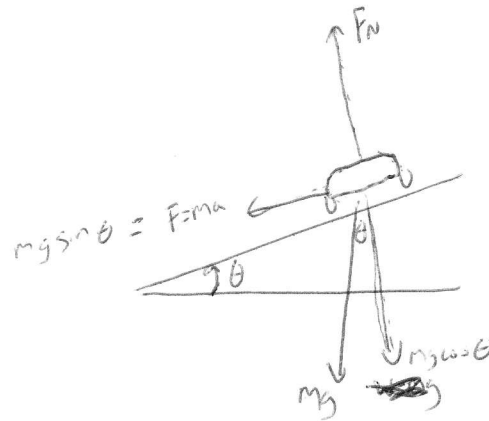
$$\sum F_x = ma = mg \sin \theta$$

if so, $a = g \sin \theta$

$$g \sin \theta = \frac{v^2}{R} \rightarrow \sin \theta = \frac{v^2}{Rg}$$

$$\theta = \sin^{-1} \left(\frac{88^2}{500(32.2)} \right)$$

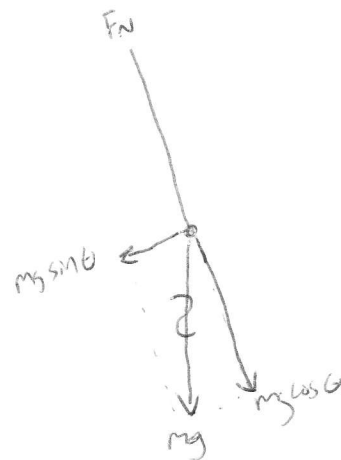
$$\theta = 28.8^\circ$$



$$\sin \theta = \frac{w_x}{mg}$$

$$w_x = mg \sin \theta$$

$$F_s = \mu_s n = 0?$$



$$\theta = \sin^{-1} \left(\frac{v^2}{Rg} \right)$$

$$= \sin^{-1} \left(\frac{60}{0.095(32.2)} \right)$$

$$60 \frac{\text{mi}}{\text{h}} \left(\frac{\text{h}}{60 \text{ min}} \right) \left(\frac{\text{min}}{60 \text{ s}} \right) \left(\frac{5280 \text{ ft}}{\text{mi}} \right)$$

$$= \frac{60(5280)}{3600} = \frac{5280}{60} = 88 \frac{\text{ft}}{\text{s}}$$