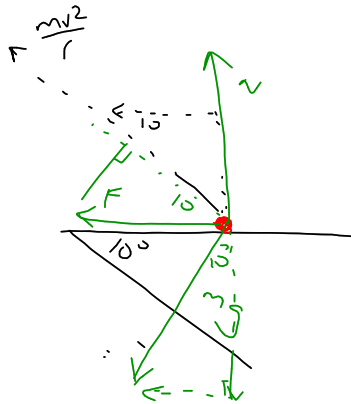
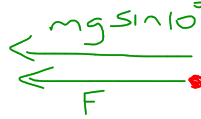


3,



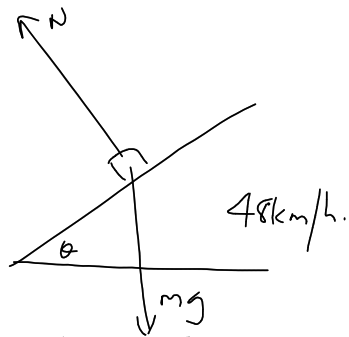
$$F \text{ direction of bank} = \frac{mv^2}{r} \cos 10^\circ$$



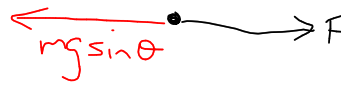
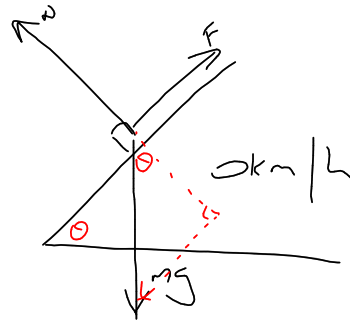
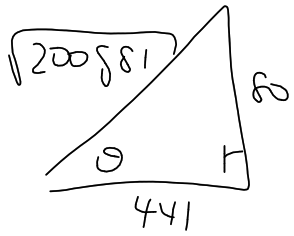
$$mg \sin 10^\circ + F = \frac{mv^2}{r} \cos 10^\circ$$

$$\begin{aligned}
 F &= \frac{mv^2}{r} \cos 10^\circ - mg \sin 10^\circ \\
 &= \frac{(1200)(20)^2}{(150)} \cos 10^\circ - (1200)(9.8) \sin 10^\circ \\
 &= \underline{\underline{1109 \text{ N}}}
 \end{aligned}$$

5/



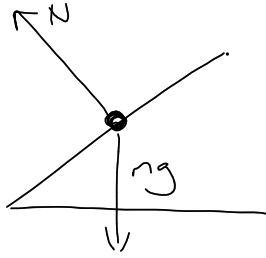
$$\theta = \tan^{-1} \left(\frac{80}{441} \right)$$



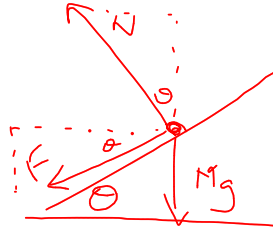
$$F = mg \sin \theta$$

$$= (100000)(9.8) \left(\frac{80}{\sqrt{200881}} \right)$$

6/



$$\tan \theta = \frac{v^2}{Rg}$$



$$F \cos \theta + N \sin \theta = \frac{Mv^2}{R}$$



$$N \cos \theta - F \sin \theta = Mg$$

$$F \cos^2 \theta + N \sin \theta \cos \theta = \frac{Mv^2}{R} \cos \theta \quad \text{---}$$

$$- F \sin^2 \theta + N \sin \theta \cos \theta = Mg \sin \theta$$

$$F = \frac{Mv^2}{R} \cos \theta - Mg \sin \theta$$

