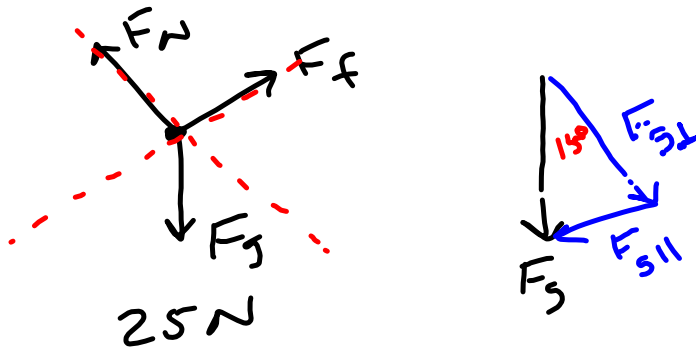
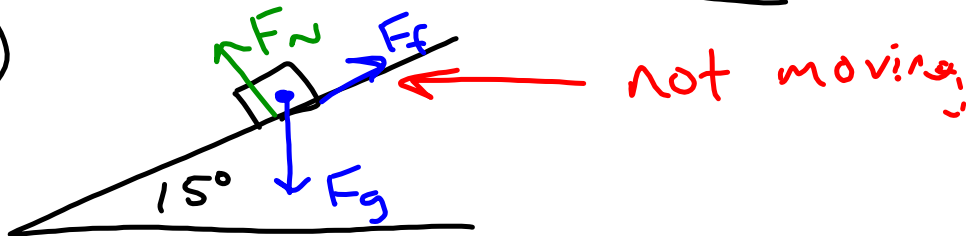


Objects on an Incline → WS 3

5)



$$\cos(15^\circ) = \frac{F_{g\perp}}{F_g}$$

$$F_{g\perp} = F_g \cos(15^\circ)$$

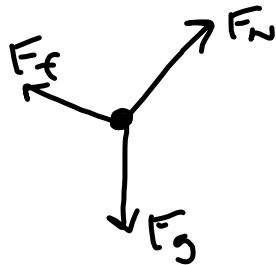
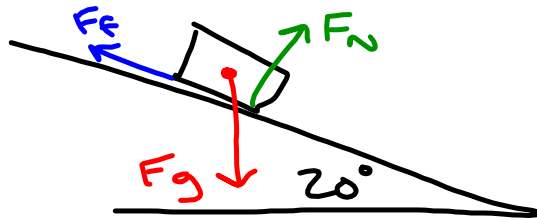
$$= 24.1 \text{ N}$$

$$\sin(15^\circ) = \frac{F_{g\parallel}}{F_g}$$

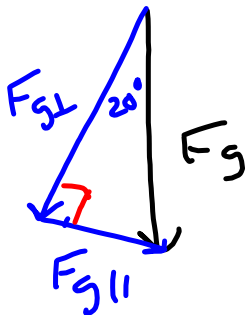
$$F_{g\parallel} = F_g \sin(15^\circ)$$

$$= 6.5 \text{ N}$$

6)

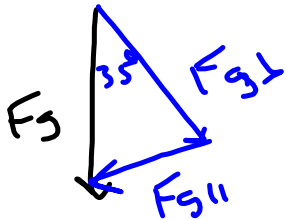
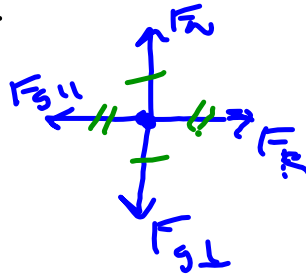
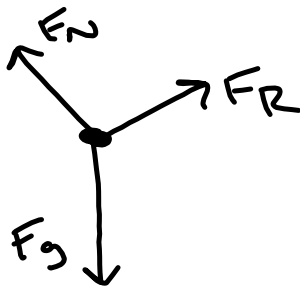
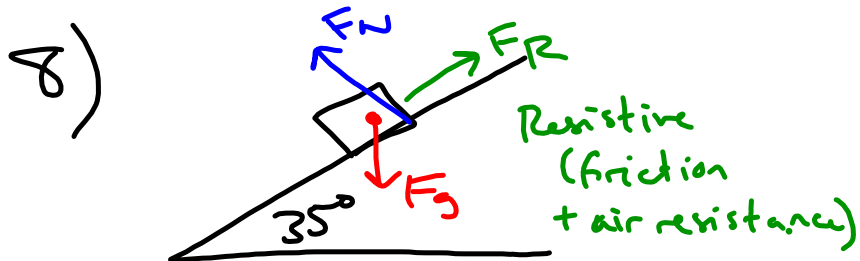


$$\begin{aligned}
 F_g &= m a_g \\
 &= (2000 \text{ kg})(9.8 \text{ m/s}^2) \\
 &= 19600 \text{ N}
 \end{aligned}$$



$$\begin{aligned}
 F_{g\perp} &= F_g \cos(20^\circ) \\
 &= 18418 \text{ N}
 \end{aligned}$$

$$\begin{aligned}
 F_{g\parallel} &= F_g \sin(20^\circ) \\
 &= 6703 \text{ N}
 \end{aligned}$$



$$\cos(35^\circ) = \frac{F_{g\perp}}{F_g}$$

$$F_{g\perp} = F_g \cos(35^\circ) = 722 \text{ N}$$

$$\sin(35^\circ) = \frac{F_{g\parallel}}{F_g}$$

$$F_{g\parallel} = F_g \sin(35^\circ) = 506 \text{ N}$$

$$\begin{aligned} F_g &= m g \\ &= (90 \text{ kg})(9.8 \text{ m/s}^2) \\ &= 882 \text{ N} \end{aligned}$$

WORKSHEET 2

