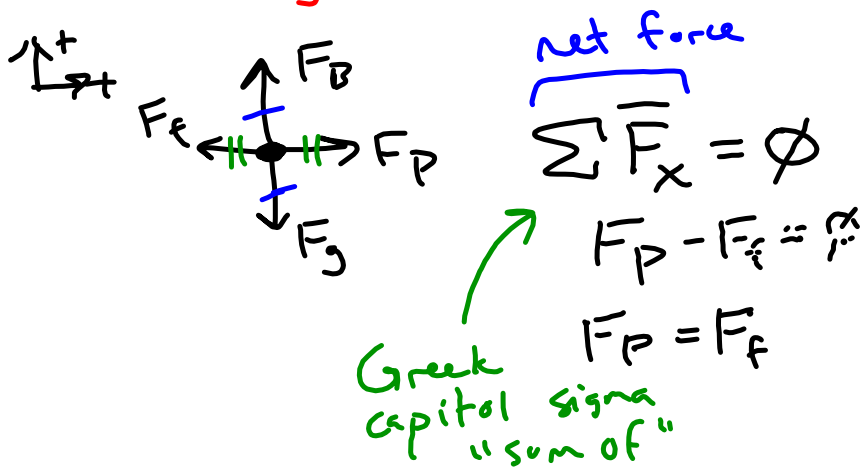
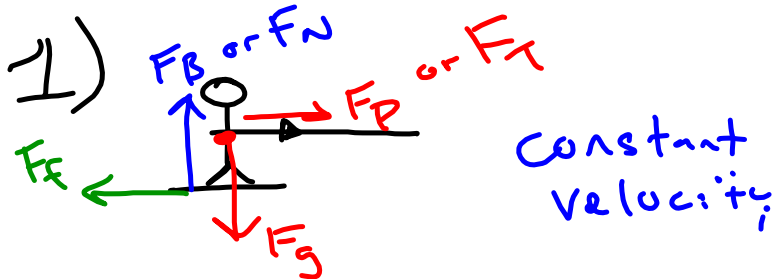


FORCES

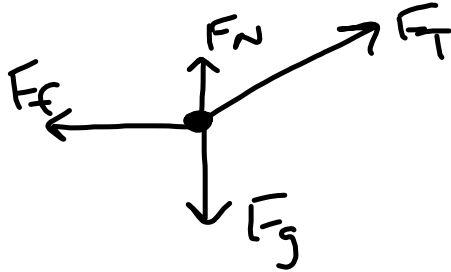
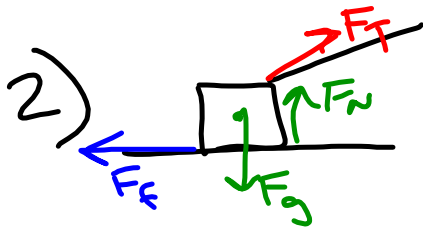
- Force Diagrams \rightarrow
simple drawing with forces:
- Free-Body Diagram \rightarrow
object is drawn as a dot



$$\sum F_y = 0$$

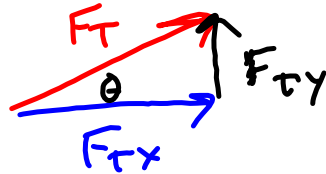
$$F_B - F_g = 0$$

$$F_B = F_g$$



constant velocity

θ → Greek lowercase theta "angle"

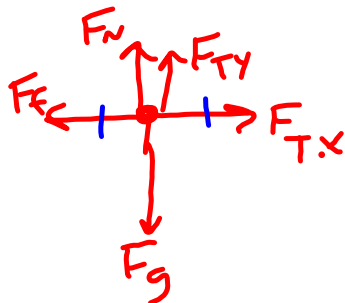
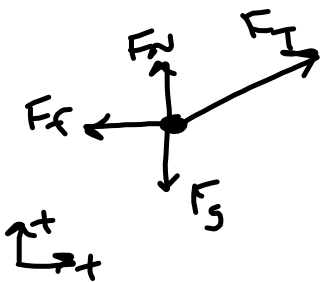


SOHCAHTOA

$$\sin \theta = \frac{F_{Ty}}{F_T} \quad F_{Ty} = F_T \sin \theta$$

$$\cos \theta = \frac{F_{Tx}}{F_T} \quad F_{Tx} = F_T \cos \theta$$

$$\tan \theta = \frac{F_{Ty}}{F_{Tx}} \quad F_{Ty} = F_{Tx} \tan \theta$$



$$\sum F_x = 0$$

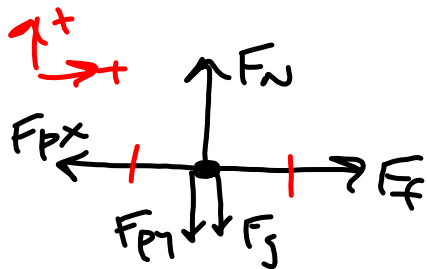
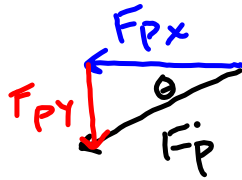
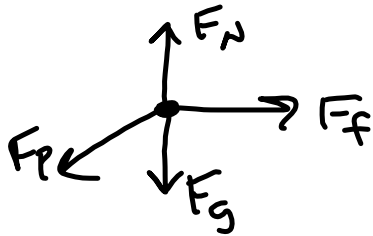
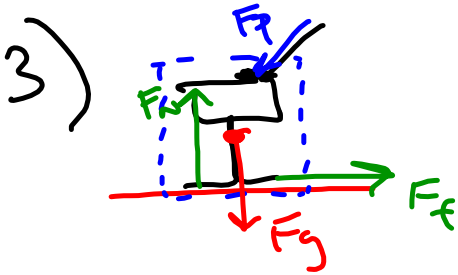
$$F_{Tx} - F_f = 0$$

$$F_{Tx} = F_f$$

$$\sum F_y = 0$$

$$F_N + F_{Ty} - F_g = 0$$

$$F_N + F_{Ty} = F_g$$



$$\sum F_x = 0$$

$$F_f - F_{px} = 0$$

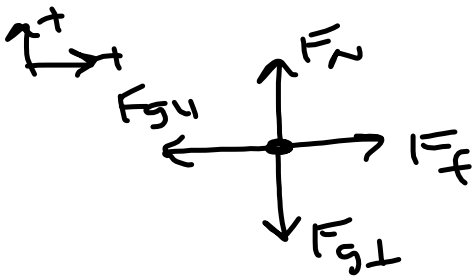
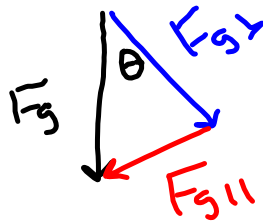
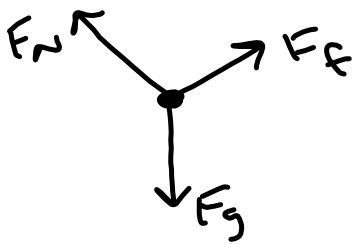
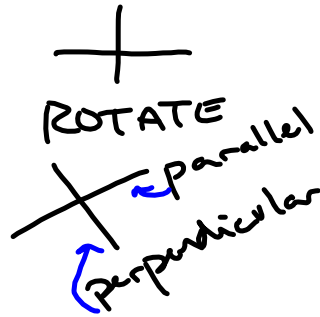
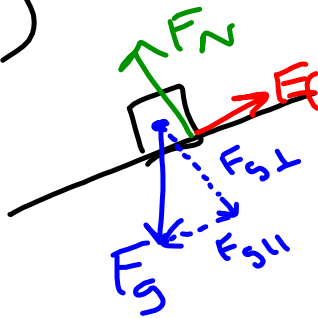
$$F_f = F_{px}$$

$$\sum F_y = 0$$

$$F_N - F_{py} - F_g = 0$$

$$F_N = F_{py} + F_g$$

5)



$$\cos \theta = \frac{F_{g\parallel}}{F_g}$$

$$F_{g\parallel} = F_g \cos \theta$$

$$\sin \theta = \frac{F_{g\perp}}{F_g}$$

$$F_{g\perp} = F_g \sin \theta$$

$$\sum F_{\parallel} = 0$$

$$F_f - F_{g\parallel} = 0$$

$$F_f = F_{g\parallel}$$

$$\sum F_{\perp} = 0$$

$$F_N - F_{g\perp} = 0$$

$$F_N = F_{g\perp}$$

