



$$\sum \vec{F}_x = m\vec{a}_x = 0$$

$$F_{fs} - F_w = 0$$

$$\mu_s F_N = F_w$$

$$0.6 (1000N) = F_w$$

$$\underline{F_w = 600N}$$

$$\sum \vec{F}_y = m\vec{a}_y = 0$$

$$F_N - F_c - F_g = 0$$

$$F_N = F_c + F_g$$

$$= 200N + 800N$$

$$\underline{\underline{F_N = 1000N}}$$

$$\mu_s = 0.6$$

$$\sum \vec{\tau} = 0$$

$$-r_L F_c - r_G F_g + r_w F_w = 0$$

$$r_G = \frac{-r_L F_c + r_w F_w}{F_g}$$

$$= \frac{-2.57m(200N) + (6.13m)600N}{800N}$$

$$r_L = \frac{8m}{2} \cos 50^\circ$$

$$r_L = 2.57m$$

$$r_w = 8m \sin 50^\circ$$

$$r_w = 6.13m$$

$$r_G = 3.95m$$

$$d \cos 50^\circ = r_G$$

$$d = \frac{r_G}{\cos 50^\circ}$$

$$= \frac{3.95m}{\cos 50^\circ}$$

$$\boxed{d = 6.15m}$$