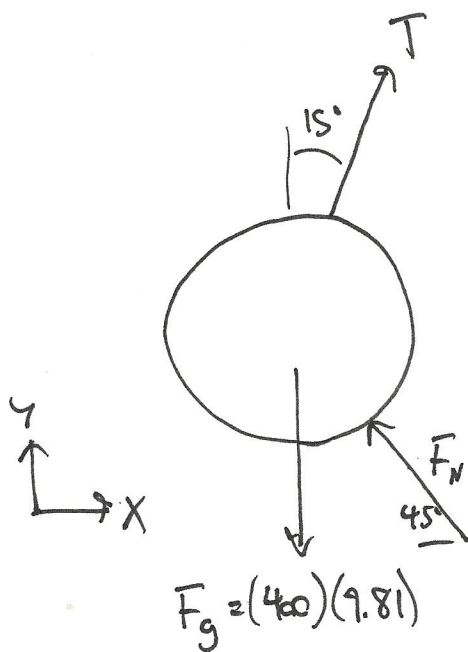
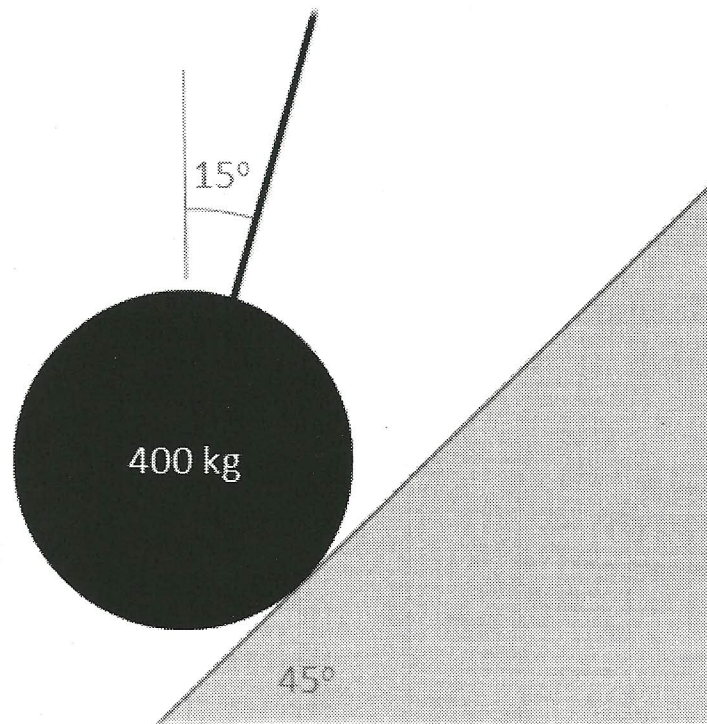


A 400 kg wrecking ball rests against a surface as shown below. Assuming the wrecking ball is currently in equilibrium, determine the tension force in the cable supporting the wrecking ball and the normal force that exists between the wrecking ball and the surface.



$$\sum F_x = T \sin(15) - F_N \cos(45) = 0$$

$$\sum F_y = T \cos(15) + F_N \sin(45) - (400)(9.81) = 0$$

$$T = \frac{\cos(45)}{\sin(15)} F_N$$

$$\frac{\cos(45)}{\sin(15)} \cos(15) F_N + \sin(45) F_N = 3924 \text{ N}$$

$$F_N = 1172.7 \text{ N}$$

$$T = 3203.9 \text{ N}$$