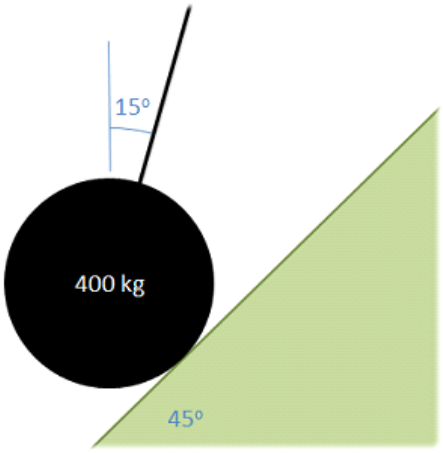
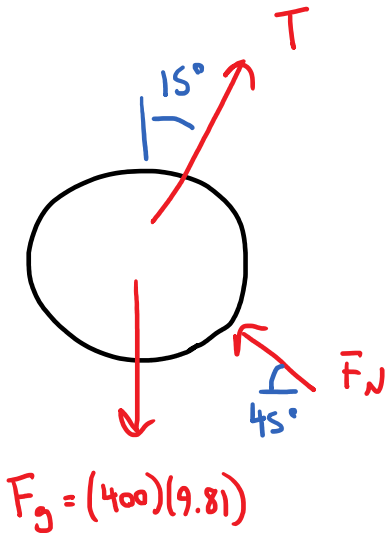
Question 3

A cable supports a large mass resting along an angled surface. Determine the tension in the cable and the normal force acting on the mass.





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

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

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

$$\left(\frac{\cos(45)}{\sin(15)} F_N\right)\cos(15) + F_N\sin(45) = 3924$$

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

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