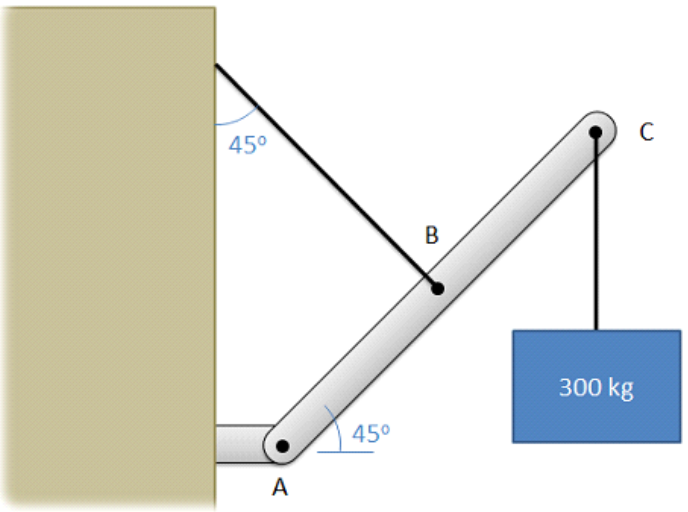
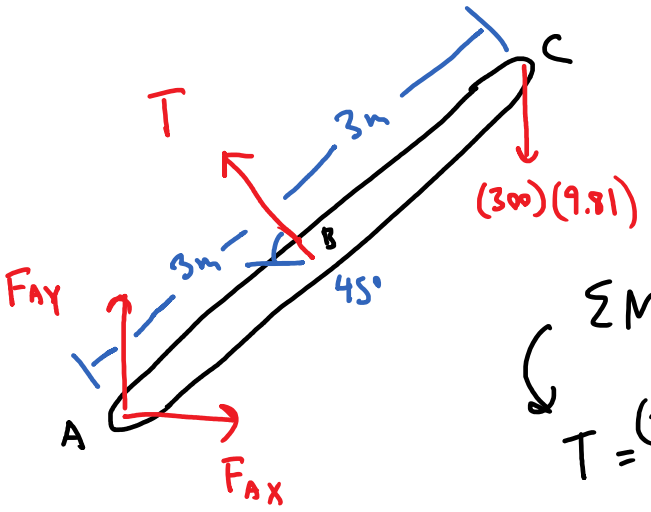
Question 4

Member ABC is 6 meters long with point B being in the middle. Determine all forces acting on member ABC.





$$\Sigma F_x = F_{AX} - T\cos(45) = 0$$

$$\Sigma F_y = F_{AY} + T\sin(45) - (300)(9.81) = 0$$

$$\Sigma M_A = (3)(T) - (6\cos(45))(300)(9.81) = 0$$

$$T = \frac{(300)(9.81)(6\cos(45))}{3} = \boxed{4162\ N}$$

$$F_{AX} = T\cos(45) = \boxed{2943\ N}$$

$$F_{AY} = (300)(9.81) - T\sin(45) = \boxed{0}$$