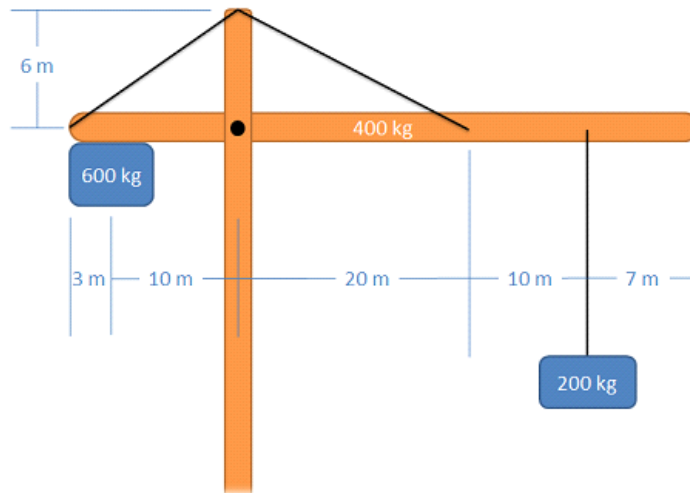


Problem 5

The main arm of a crane has a mass of 400kg (assume the center of mass is at the midpoint of the arm) and supports a 200 kg load and a 600 kg counterweight. The arm is connected to the vertical support via a pin joint and two flexible cables. Draw a free body diagram of the arm.



$$\tan^{-1}\left(\frac{6}{13}\right) = 24.8^\circ$$



$$\tan^{-1}\left(\frac{6}{20}\right) = 16.7^\circ$$

