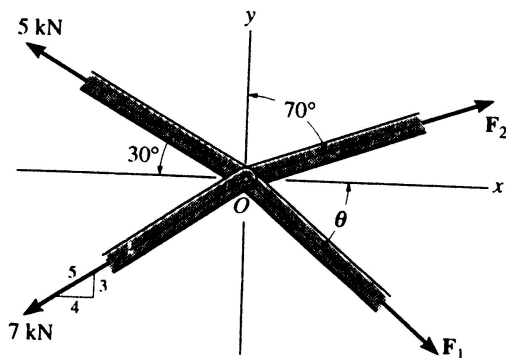
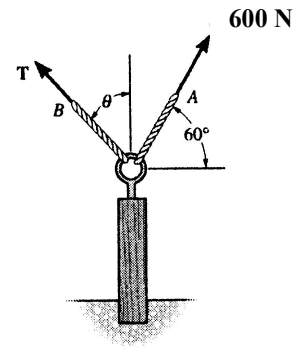
	Alexandria Higher Institute of Engineering & Technology (AIET)		
	Preparatory Year		
	ME001	Mechanics I	Mid Term, Dec.,23,2009
	Examiners:	Prof. Dr. Abd Elfatah Rezk and Dr. Rola Afify	Time: 1.5 hour

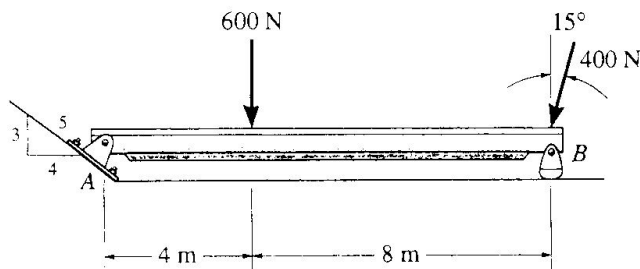
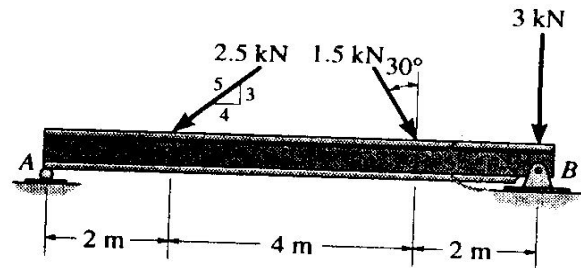
Answer the following questions:

- 1- The post is to be pulled out of the ground using two ropes A and B. Rope A is subjected to a force 600 N and is directed at 60° from the horizontal. If the resultant force is to be 1200 N, vertically upward, determine the force T in rope B and the corresponding angle θ .



- 2- Determine the magnitude of the force F_1 and F_2 so that the particle is in equilibrium. Take $\theta = 60^\circ$.

- 3- Replace the force system acting on the beam by an equivalent resultant force and couple moment at point A.



- 4- Determine the magnitude of the reactions on the beam at A and B. Neglect the thickness of the beam.

Good Luck