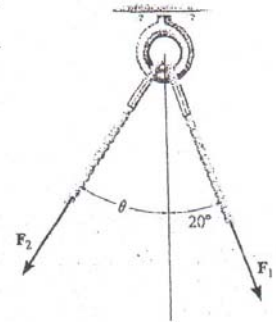
	Alexandria Higher Institute of Engineering & Technology (AIET)		
	Department of: General	Preparatory Year	0th Year
	ME001	Mechanics 1	Midterm-of-Semester-1 Exam, Dec., 2, 2014
	Examiners:	Dr. Raafat Ayad Abdou and Dr. Rola Affify	Time: 1.5 hour

Answer the following questions:

Question one: (3 marks)

The ring shown in Fig (1) is subjected to two forces F_1 and F_2 if it is required that the resultant force have a magnitude of 1 KN and be directed vertically downward, Determine

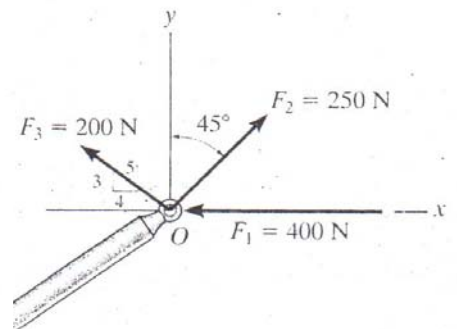
- a) The magnitudes of F_1 and F_2 provided $\theta = 30^\circ$
- b) The magnitudes of F_1 and F_2 if F_2 is to have minimum magnitude .



Fig(1)

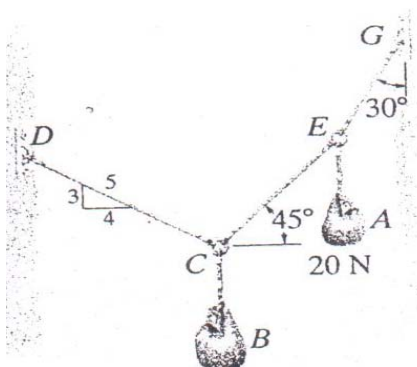
Question Two: (3 marks)

The end of the boom O in Fig (2) is subjected to three concurrent and coplaner forces . Determine the magnitude and orientation of the resultant force.



Fig(2)

Question Three: (4 marks)



If the sake A in Fig (3) has a weight of 20 N, Determine The weight of the sake at B and the force in each cord Needed to hold the system in equilibrium position Shown.

Fig (3)

Question Four: (3 marks)

Determine the moment of the couple acting on the member shown in Fig (4)

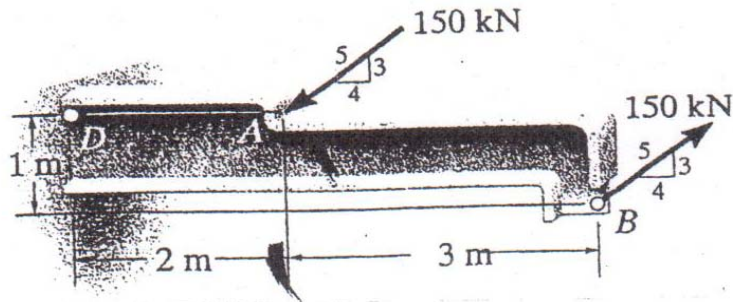


Fig (4)

Question Five: (7 marks)

Determine the force in each member of the truss and state if the members are in tension or in compression.

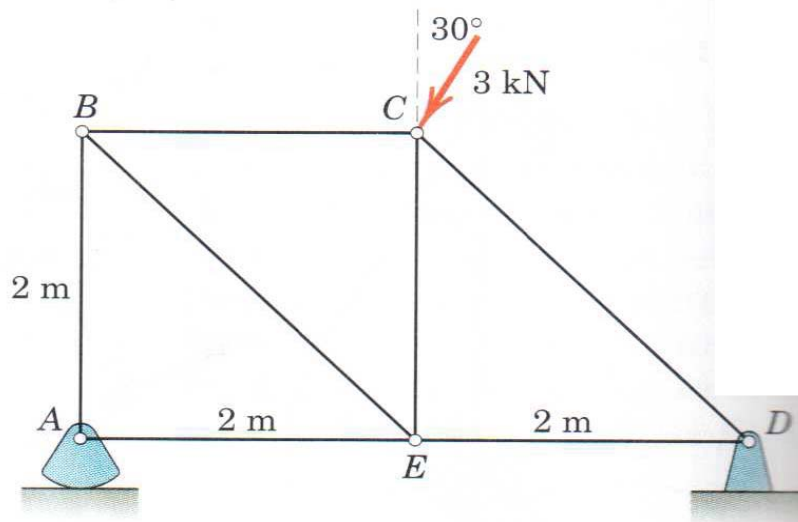


Fig. (5)