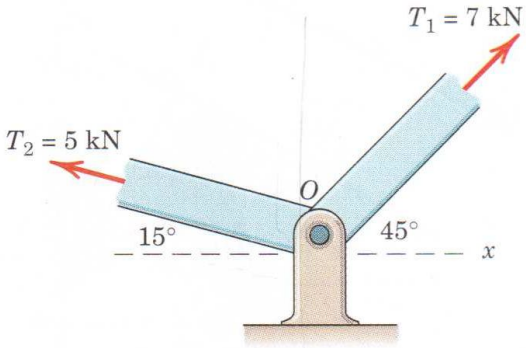
Alexandria Higher Institute of Engineering & Technology (AIET)			
Department of: General	Preparatory Year	0th Year	
ME001	Mechanics I	Midterm-of-Semester-1 Exam, Dec., 20, 2011	
Examiners:	Dr. Sayed Hassan and Dr. Rola Afify		Time: 1.5 hour

Answer the following questions:

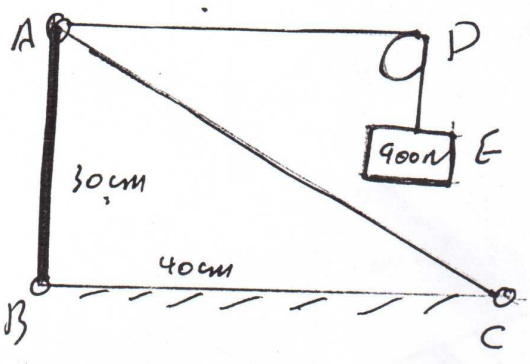
Question One: (6 marks)

Determine the magnitude of the resultant R of the two forces shown and its direction measured counterclockwise from positive x-axis by applying:
A) Graphical solution (parallelogram law). B) Analytical solution.



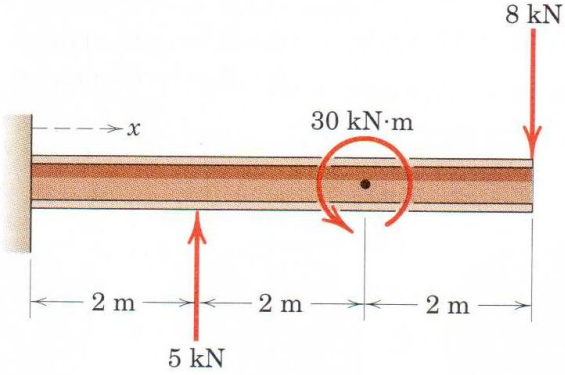
Question Two: (4 marks)

AB and AC are weightless rods, Determine the force in each rod in equilibrium position.



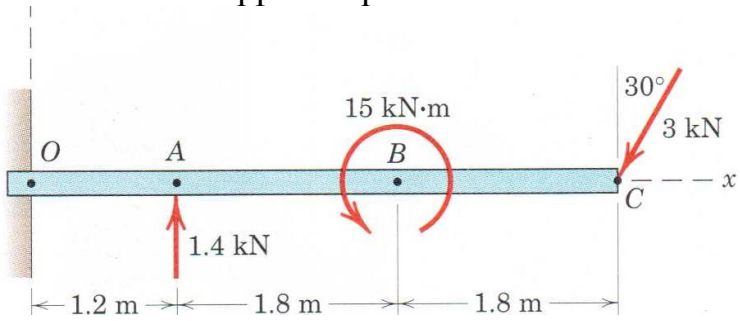
Question Three: (3 marks)

Determine and locate the resultant R of the two forces and one couple moment acting on the beam.



Question Four: (3 marks)

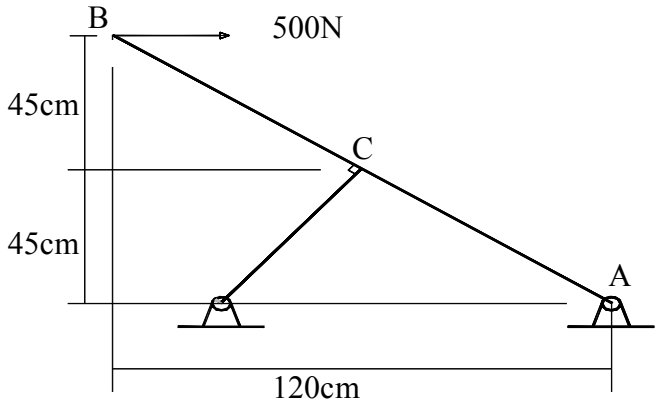
The 500 kg uniform beam is subjected to the three external loads shown. Compute the reactions at the support at point O.



Choose between the next two questions:-

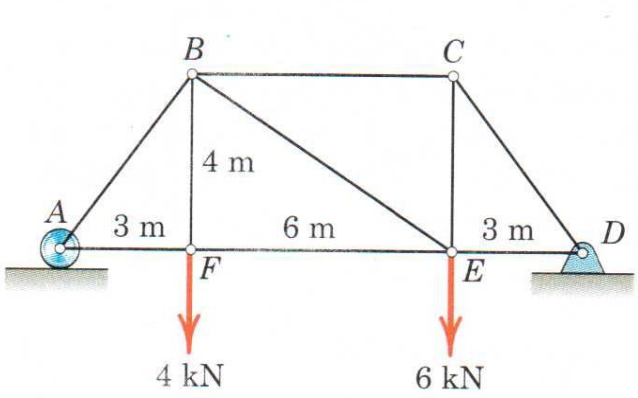
Question Five: (4 marks)

C is in the mid of beam AB and CD is perpendicular on AB. Determine the reaction at A and the force in CD.



Question six: (4 marks)

Determine the force in each member of the loaded truss and specify whether they are in tension or in compression.



Good Luck **Page 2/2**