

King Fahd University of Petroleum & Minerals

Department of Civil and Environmental Engineering

CE 201 – Static

Semester: 112
Examination: Second Major
Date (Day): April 17, 2012 (Tuesday)
Time: 07:00 – 09:00 p.m.

Section	1 & 11	2 & 5	3	4	7 & 9	10 & 12	13
Instructor	Chowdhary	Mandil	Qahtani	Hussein	Malack	Arifulzaman	Sharif
Time	09:00 & 11:00	08:00 & 09:00	09:00	10:00	08:00 & 13:10	10:00 & 09:00	11:00
Tick							

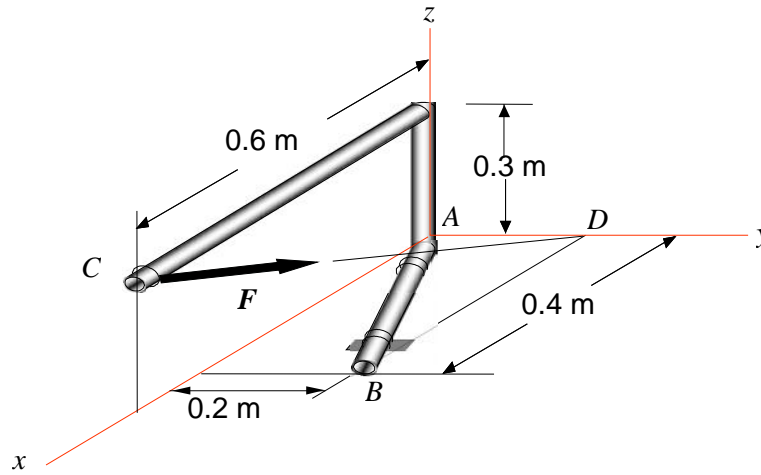
Student's Name :
Student's ID :

Problem	Assigned Grade	Earned Grade
1A	10 (Points)	
1B	15 (Points)	
2	25 (Points)	
3	25 (Points)	
4	25 (Points)	
Total	100 (Points)	

Good Luck

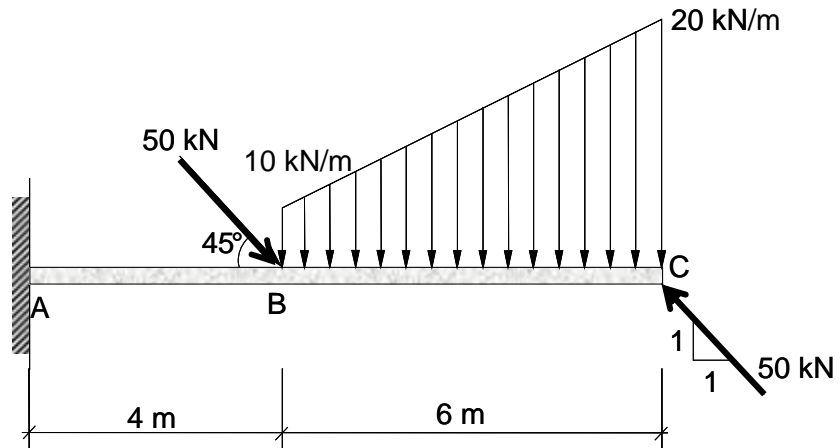
Problem 1A (10 Points)

Determine the moment produced by the force $F = 700$ N about the segment AB of the pipe assembly. Express the results as Cartesian vector.



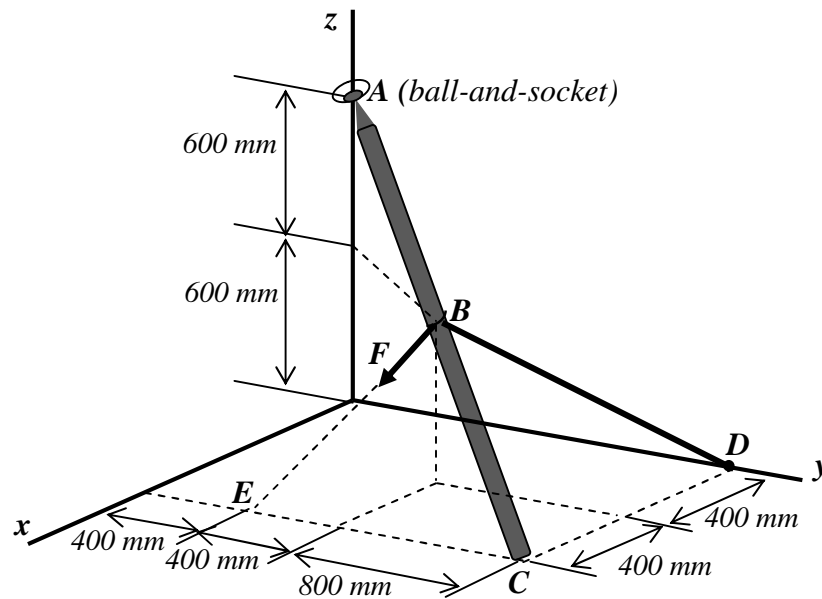
Problem 1B (15 Points)

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



Problem 2 (25 Points)

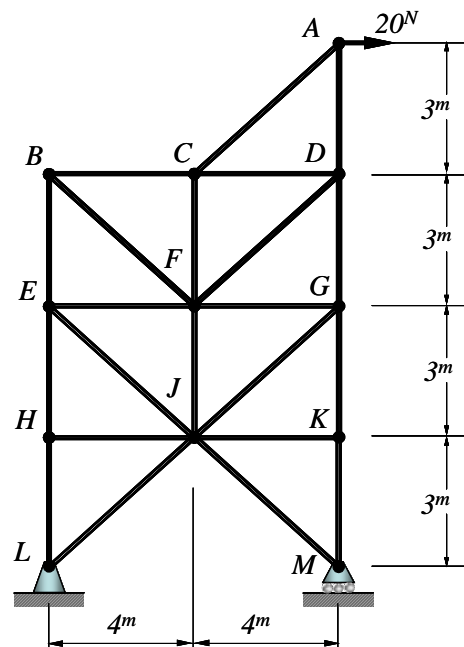
The rod AC rests against a smooth surface at end C and is supported at end A with a ball-and-socket joint. The cable at B is attached midway between the ends of the rod. Determine the reactions at A and C and the tension in the cable BD. Use $F = 800 \text{ N}$.



Problem 3 (25 Points)

In the truss shown below:

- 5% A) Find zero-force members.
- 10% B) Find force in member (AD) by the joint method and state if the member is in tension or compression.
- 10% C) Find force in member (KG) by the section method and state if the member is in tension or compression.



Problem 4 (25 Points)

If each pulley has a radius of 250 mm, find the forces exerted by pins A, B and D on the member ABD.

