CONCORDIA UNIVERSITY

Faculty of Engineering and Computer Science

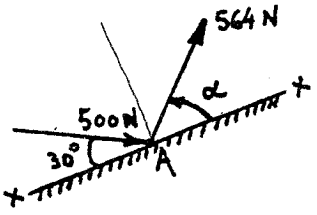
ENGR 242/4 Section J

Test #1

Attempt all questions. Only calculators permitted

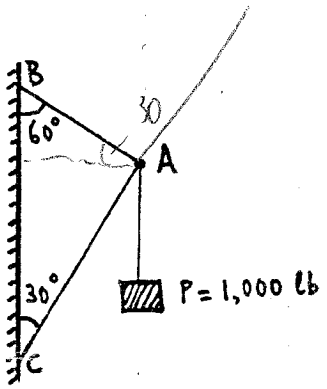
Time - 60 Minutes

1. Determine the angle α so that the resultant of the two forces acting at A is parallel to the plane xx.



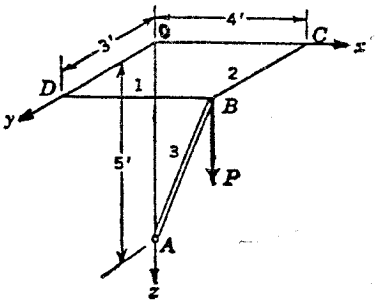
(20 marks)

2. A load P = 1,000 lb is bracketed from a vertical wall by two bars AB and AC hinged together at A and to the wall at B and C as shown. Compute the axial forces induced in these bars.



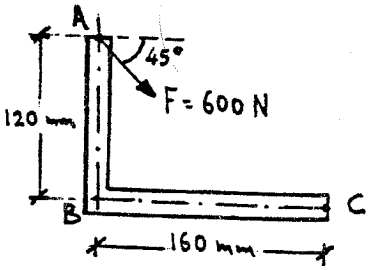
(20 marks)

3. A mast AB supported at A and by horizontal guy wires BC and BD carries a vertical load P at B as shown. Find the axial force induced in each of the three members of the system.



(30 marks)

4. Replace the 600-N force by an equivalent system formed by two parallel forces acting at B and C.



(30 marks)