



DEPARTMENT OF CIVIL ENGINEERING
FINAL TERM EXAMINATION

Subject: Applied Mechanics
Instructor: Engr Khurshid Alam
Course code: CE-144

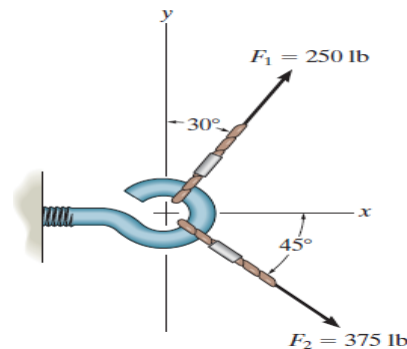
Duration: 4 hrs.
Total Marks: 50

Note: Attempt all questions. Manage your time properly. Understanding question paper is the part of examination. Draw diagrams wherever necessary. Please refer to your notes for assistance. Copy from internet will be marked less.

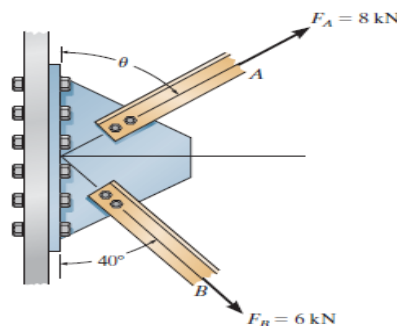
No. (01)

(5+5)

- a) Determine the magnitude of the resultant force $\mathbf{F}_R = \mathbf{F}_1 + \mathbf{F}_2$ and its direction, measured counter clockwise from the positive x axis.



- b) The plate is subjected to the two forces at A and B as shown. If, determine the magnitude of the resultant of these two forces and its direction measured clockwise from the horizontal. $\theta = 60^\circ$

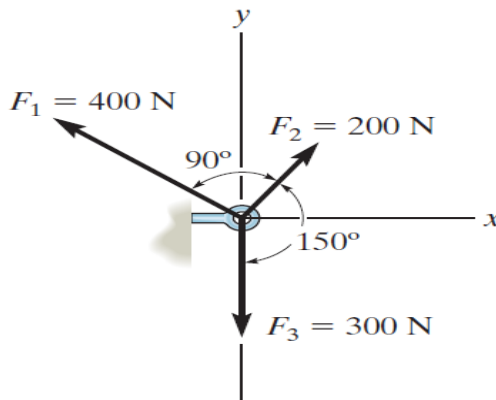




No. (02)

(5+5)

- a) Determine the magnitude and direction of the resultant force, \mathbf{F}_R measured counter clockwise from the positive x axis. Solve the problem by first finding the resultant $\mathbf{F}' = \mathbf{F}_1 + \mathbf{F}_2$ and then forming $\mathbf{F}_R = \mathbf{F}' + \mathbf{F}_3$.

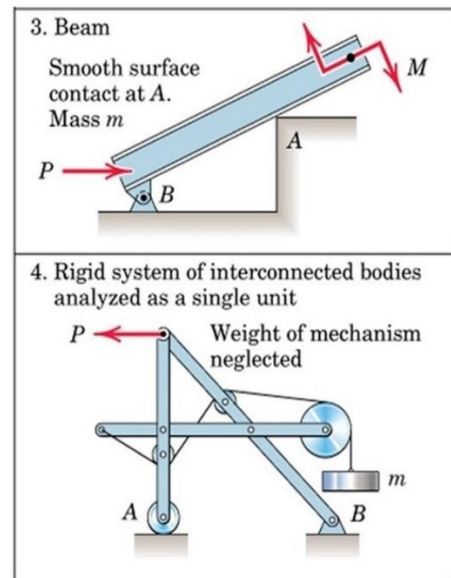
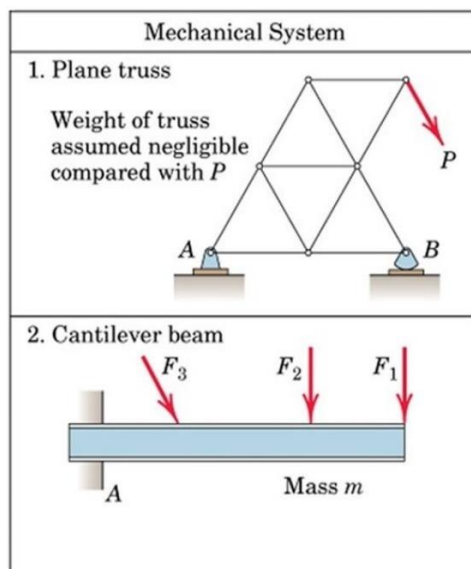


- b) Define equilibrium. Briefly describe equilibrium of rigid bodies.

No. (03)

(4+6)

- a) What is meant by two force members and three force members?
b) Draw Free body Diagram of the following.

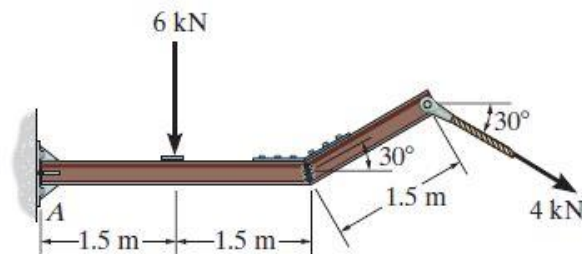




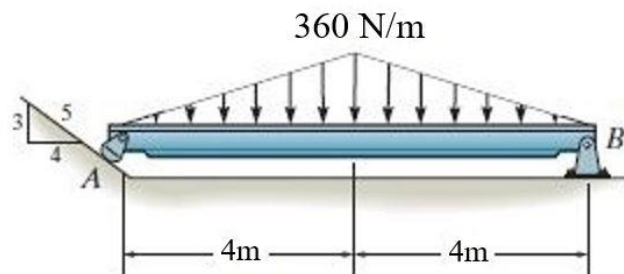
No. (04)

(5+5)

- a) Determine the components of the support reactions at the fixed support *A* on the cantilevered beam.



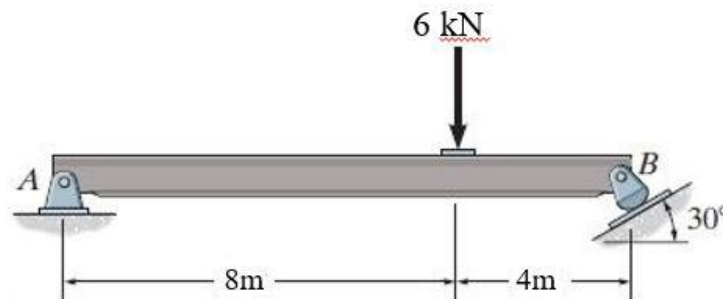
- b) Determine the reactions at the supports.



No. (05)

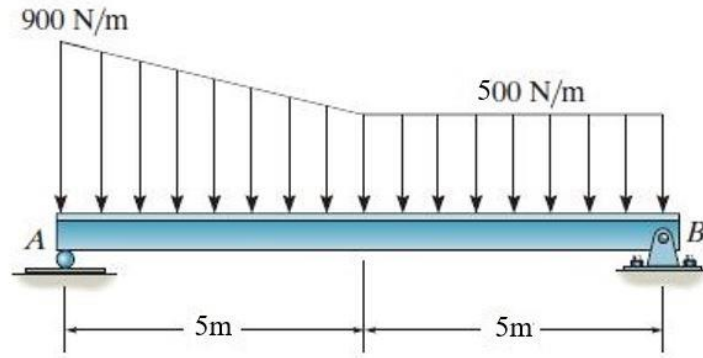
(5+5)

- a) Determine the horizontal and vertical components of reaction at the pin *A* and the reaction of the rocker *B* on the beam.





b) Determine the reactions at the supports.



THE END
