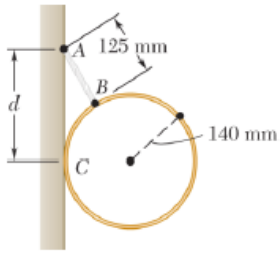
ES 208 Mechanics

Tutorial 4

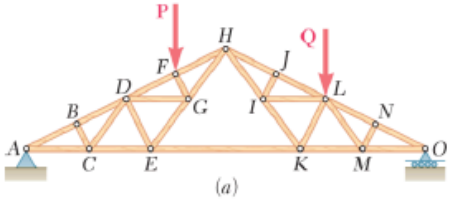
All problems are from the Beer and Johnston book



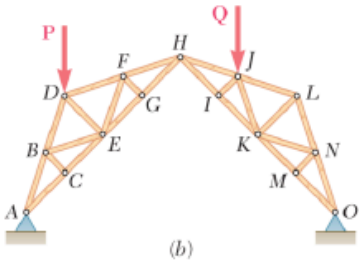
PROBLEM 4.88

A thin ring of mass 2 kg and radius $r = 140$ mm is held against a frictionless wall by a 125-mm string AB. Determine (a) the distance d, (b) the tension in the string, (c) the reaction at C.

$$d = 225 \text{ mm}, T = 23.1 \text{ N}, C = 12.21 \text{ N}$$



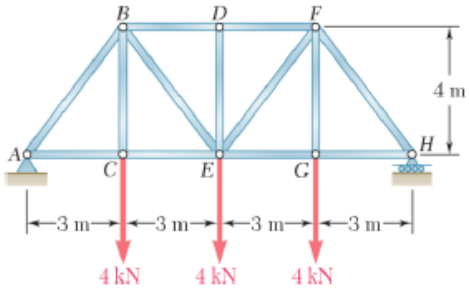
(a)



(b)

PROBLEM 6.31

For the given loading, determine the zero-force members in each of the two trusses shown.



PROBLEM 6.19

Determine the force in each member of the Pratt bridge truss shown. State whether each member is in tension or compression.

$$F_{AB} = 7.5(T), F_{AC} = 4.5(C), F_{CE} = 4.5(T), F_{BC} = 4(T), F_{BE} = 2.5(T), F_{BD} = 6(C), F_{DE} = 0, F_{DF} = 6(C)$$

4) Using the method of sections, find the forces in members BD, BE and CE in the truss given above.