1. Draw the shear and moment diagrams for the compound beam. The three segments are connected by pins B and E.
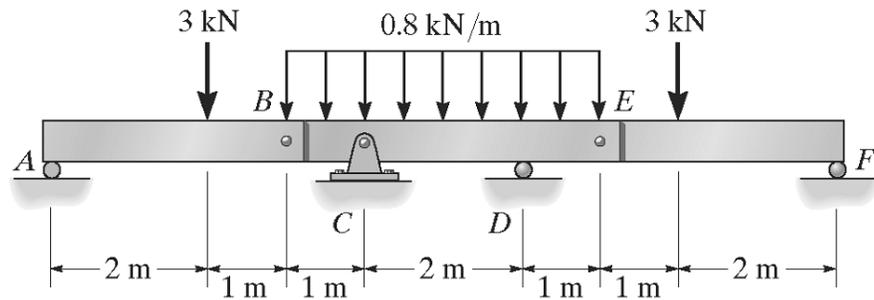
3 kN 0.8 kN/m 3 kN

B E

A F

C D

2 m 2 m 2 m

1 m 1 m 1 m 1 m

2. Determine the placement distance a of the roller support so that the largest absolute value of the moment is a minimum. Draw the shear and moment diagrams for this condition.

w

A B

a

L
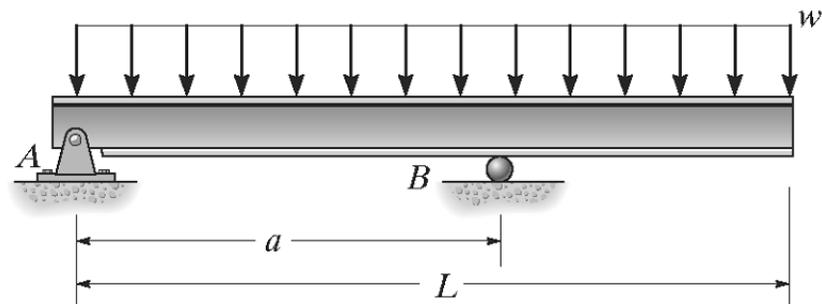
3. Determine the placement distance *a* of the roller support so that the largest absolute value of the moment is a minimum. Draw the shear and moment diagrams for this condition.
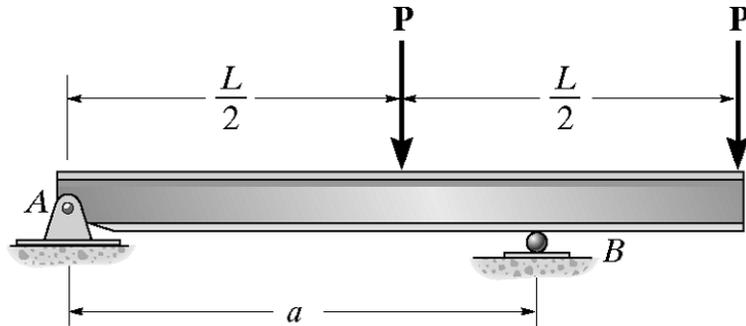
4. The truck is to be used to transport the concrete column. If the column has a uniform weight of *w* (force/length), determine the equal placement *a* of the supports from the ends so that the absolute maximum bending moment in the column is as small as possible. Also, draw the shear and moment diagrams for the column.