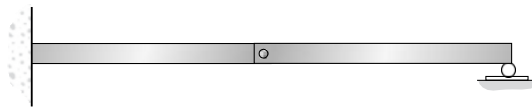**1.** Classify the beam as statically determinate or indeterminate. If indeterminate, specify the degree of indeterminacy.

2. Classify the beam as statically determinate or indeterminate. If indeterminate, specify the degree of indeterminacy.

3. Classify the beam as statically determinate or indeterminate. If indeterminate, specify the degree of indeterminacy.
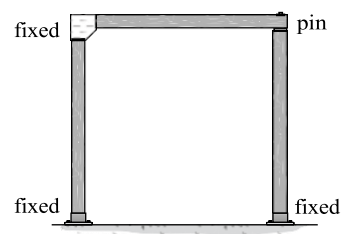

4. Classify the frame as statically determinate or indeterminate. If indeterminate, specify the degree of indeterminacy.

5. Classify the beam as statically determinate or indeterminate. If indeterminate, specify the degree of indeterminacy.
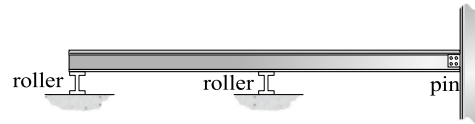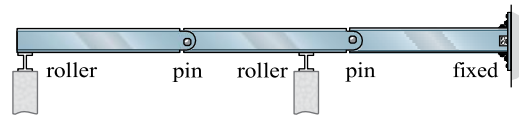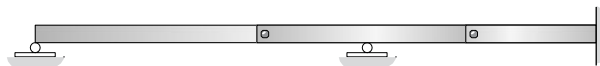

roller   roller   pin

6. Classify the beam as statically determinate or indeterminate. If indeterminate, specify the degree of indeterminacy.
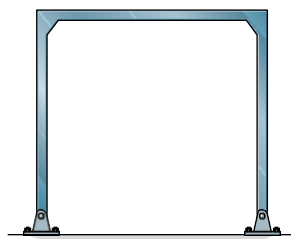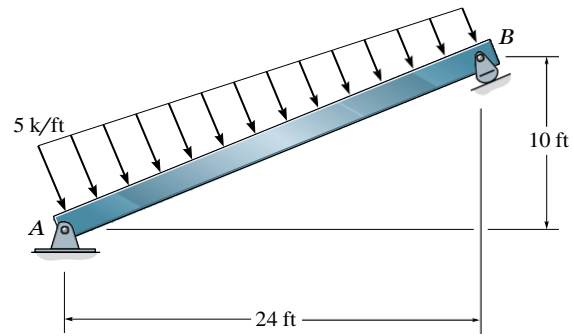

roller   pin   roller   pin   fixed

7. Classify the beam as statically determinate or indeterminate. If indeterminate, specify the degree of indeterminacy.
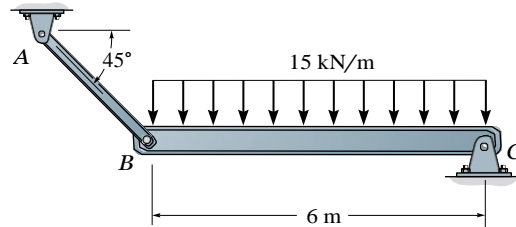

8. Classify the frame as statically determinate or indeterminate. If indeterminate, specify the degree of indeterminacy.
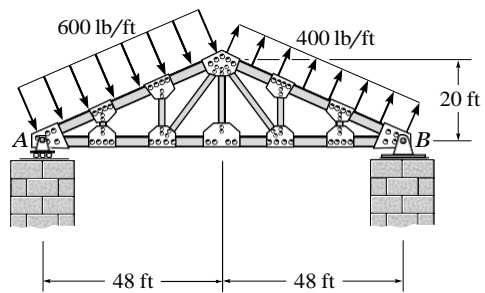
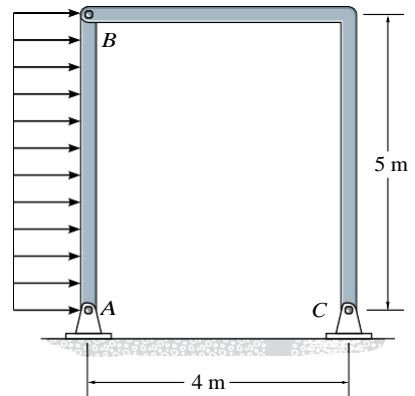**9.** Determine the reactions at the supports *A* and B.

5 k/ft

B

10 ft

A

24 ft

10. Determine the reactions at the supports *A* and C.

A

45°

15 kN/m

B

C

6 m

11. Determine the reactions at the supports *A* and B.

600 lb/ft

400 lb/ft

20 ft
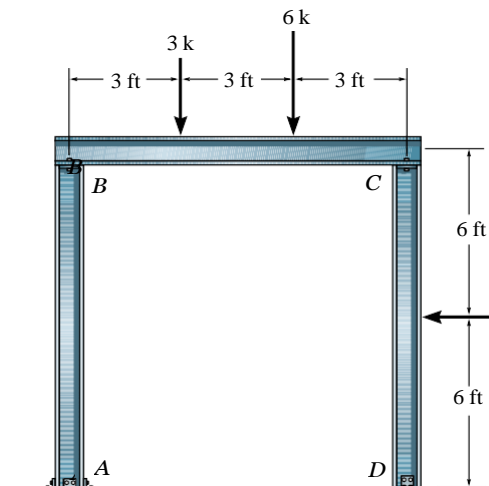
A

B

48 ft

48 ft

12. Determine the reactions at the supports of the shown frame subjected to the distributed load of 250N/m.
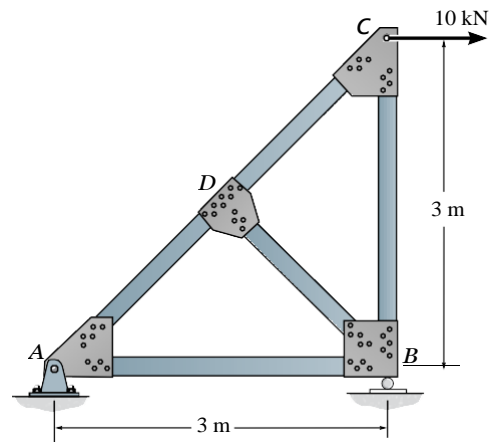

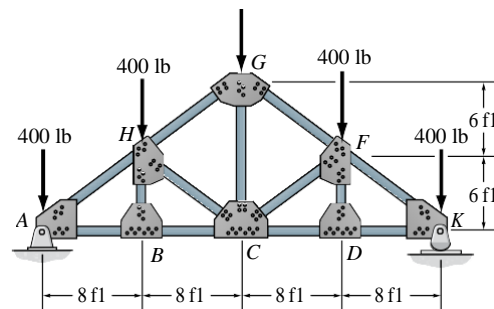**13.** Determine the reactions at the supports of the shown frame.
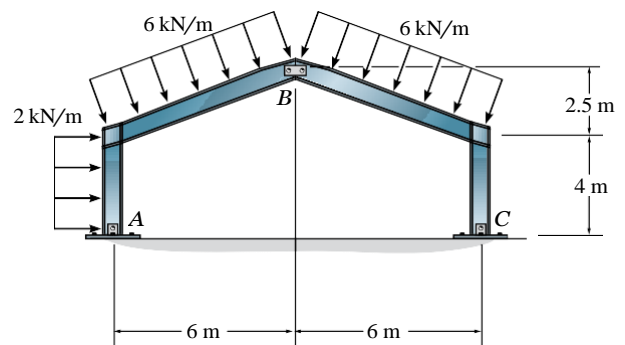
**14.** Determine the reactions at the supports of the shown frame.

**15.** Determine the force in each member of the truss and state whether it is in tension or compression.

16. Determine the force in each member of the truss and state whether it is in tension or compression.


17. Classify the following truss as statically determinate, indeterminate, or unstable. If indeterminate, state its degree.
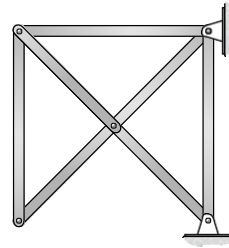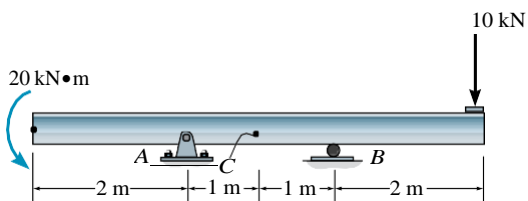
18. Classify the following truss as statically determinate, indeterminate, or unstable. If indeterminate, state its degree.
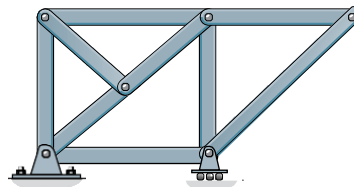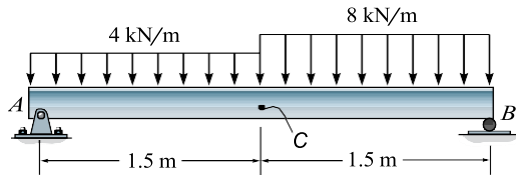

19. Classify the following truss as statically determinate, indeterminate, or unstable. If indeterminate, state its degree.
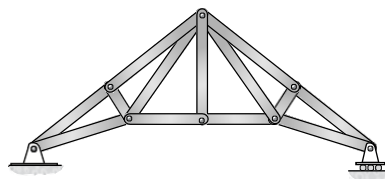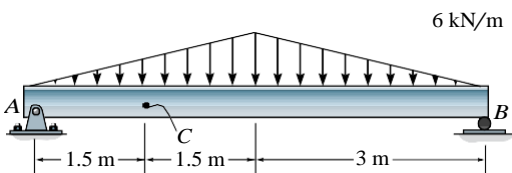

20. Determine the internal normal force, shear force, and bending moment acting at point *C* in the beam.
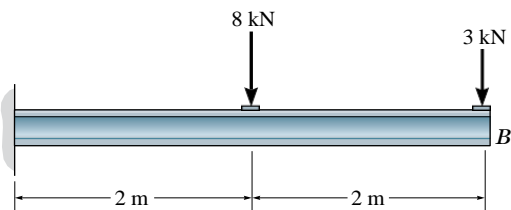
21. Determine the internal normal force, shear force, and bending moment acting at point C in the beam.
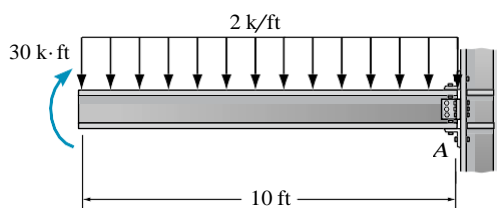

22. Determine the internal normal force, shear force, and bending moment acting at point C in the beam.

23. Draw the shear and moment diagrams for the beam.

24. Draw the shear and moment diagrams for the beam.

25 . Draw the moment diagrams for the frame. Assume the frame is pinned at *C* and the members are fixed connected at *B*.

3 k/ft

B

C

5 ft

6 ft

4 ft

8 k

5 ft

A