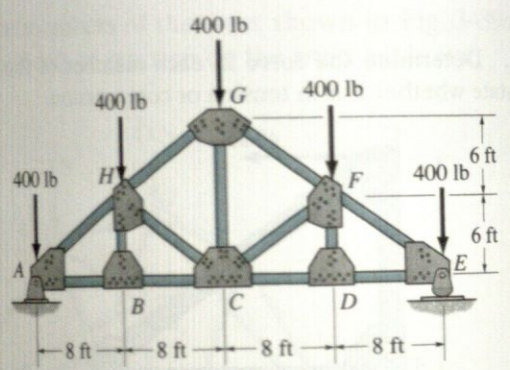
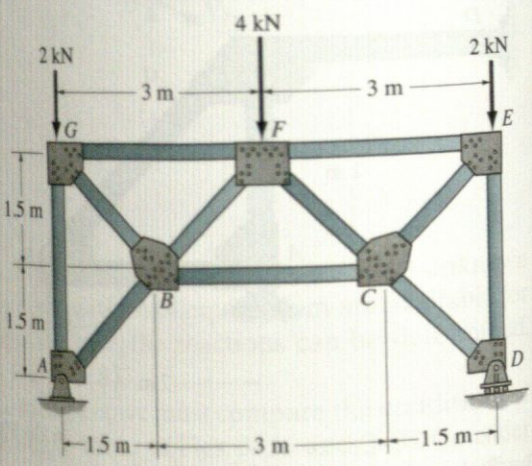


F3-10. Determine the force in members *GF*, *CF*, and *CD* and state whether they are in tension or compression.



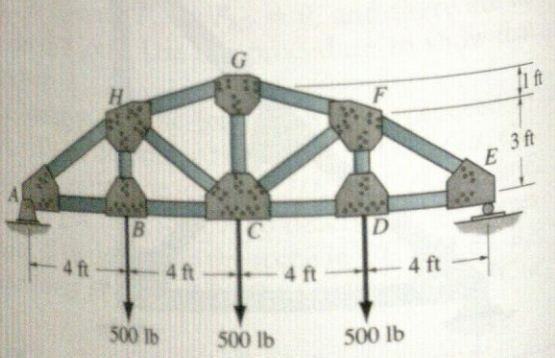
F3-10

F3-11. Determine the force in members *FE*, *FC*, and *BC* and state whether they are in tension or compression.



F3-11

F3-12. Determine the force in members *GF*, *CF*, and *CD* and state whether they are in tension or compression.

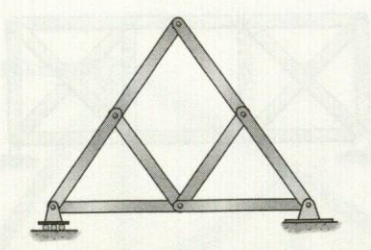


F3-12

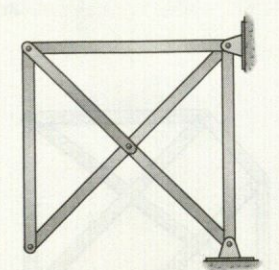
PROBLEMS

Sec. 3.1-3.2

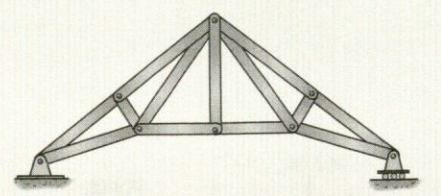
3-1. Classify each of the following trusses as statically determinate, statically indeterminate, or unstable. If indeterminate, state its degree.



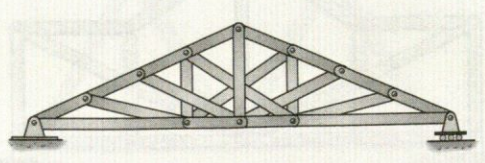
(a)



(b)



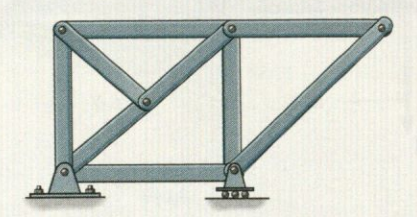
(c)



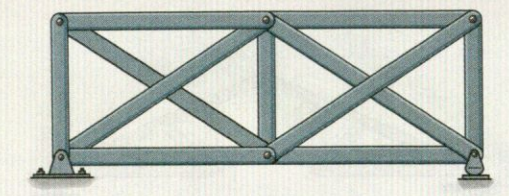
(d)

Prob. 3-1

3-2. Classify each of the following trusses as statically determinate, indeterminate, or unstable. If indeterminate, state its degree.



(a)



(b)

Prob. 3-2

3

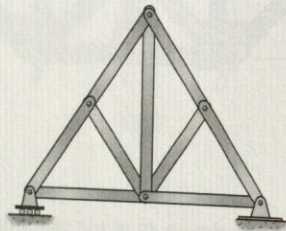


Tabl

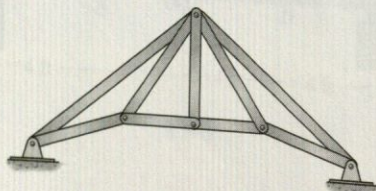
3-3. Classify each of the following trusses as stable, unstable, statically determinate, or statically indeterminate. If indeterminate state its degree.

\*3-4. Classify each of the following trusses as statically determinate, statically indeterminate, or unstable.

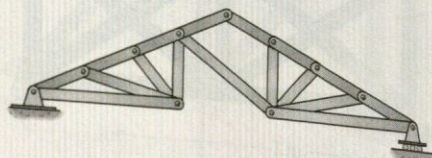
3



(a)

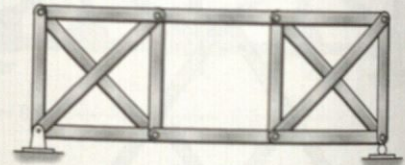


(b)

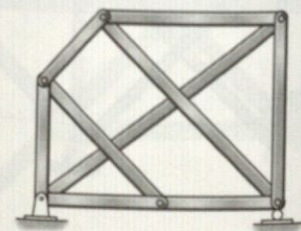


(c)

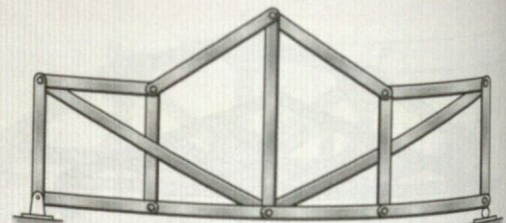
Prob. 3-3



(a)



(b)



(c)

Prob. 3-4

Sec.

3-5. State all me

3 m

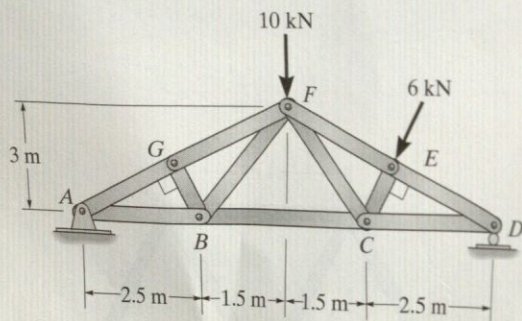
3-6. State





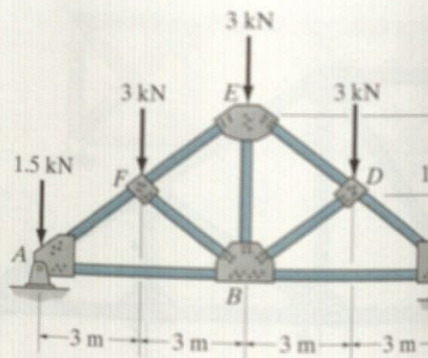


3-10. Determine the force in each member of the truss. State if the members are in tension or compression.



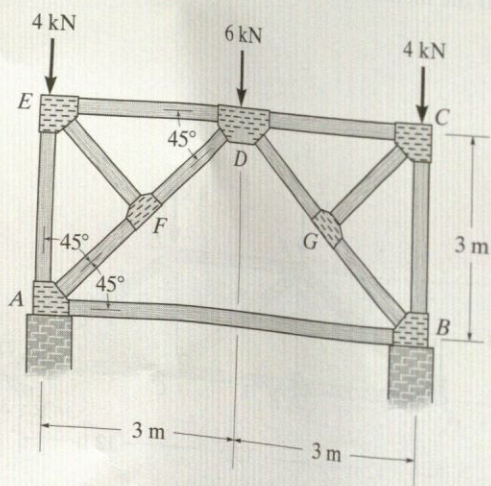
Prob. 3-10

\*3-12. Determine the force in each member. State if the members are in tension or compression. All members are pin connected.



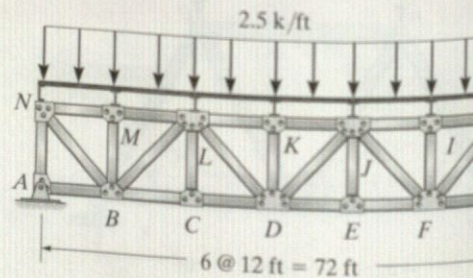
Prob. 3-12

3-11. Specify the type of compound truss and determine the force in each member. State if the members are in tension or compression. Assume the members are pin connected.



Prob. 3-11

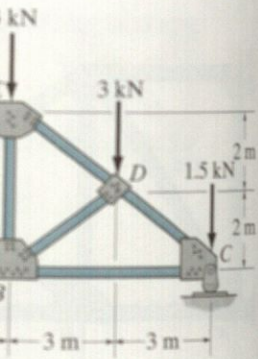
3-13. The truss shown is used to support the deck of a bridge. The uniform load on the deck is 2.5 k/ft, transferred from the deck to the floor beams, the top joints of the truss. Determine the force in each member of the truss, and state if the members are in tension or compression. Assume all members are pin connected.



Prob. 3-13

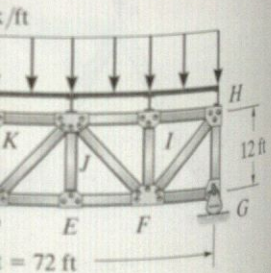


force in each member of the truss. Indicate if the members are in tension or compression. Assume all members are pin connected.



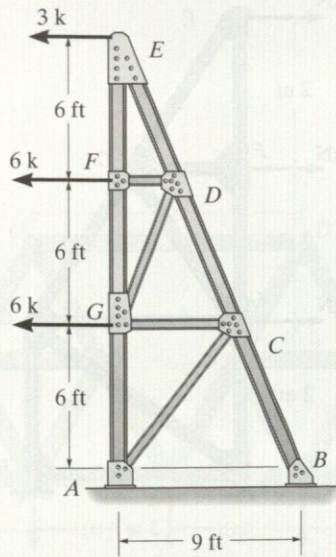
Prob. 3-12

used to support the floor deck. This load is 2.5 k/ft. This load is applied to the floor beams, which rest on the truss. Determine the force in each member of the truss. State if the members are in tension or compression. Assume all members are pin connected.



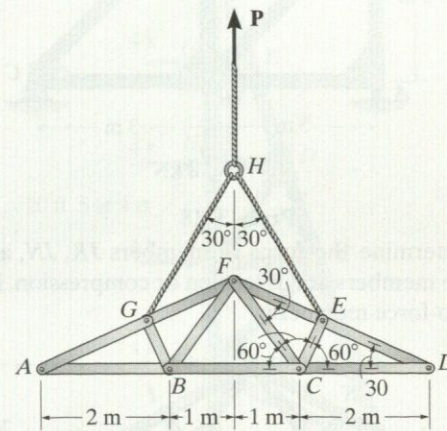
Prob. 3-13

**3-14.** Determine the force in each member of the truss. Indicate if the members are in tension or compression. Assume all members are pin connected.



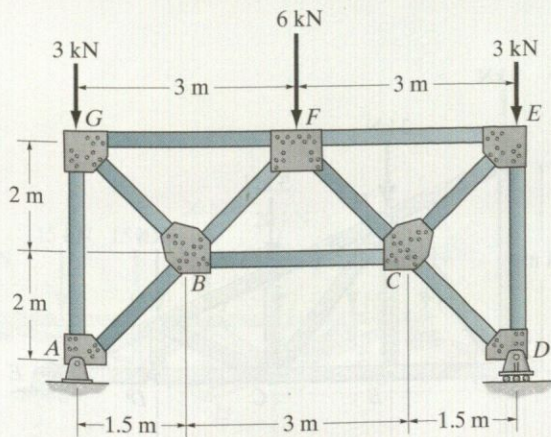
Prob. 3-14

**\*3-16.** The members of the truss have a mass of 5 kg/m. Lifting is done using a cable connected to joints E and G. Determine the largest member force and specify if it is in tension or compression. Assume half the weight of each member can be applied as a force acting at each joint.



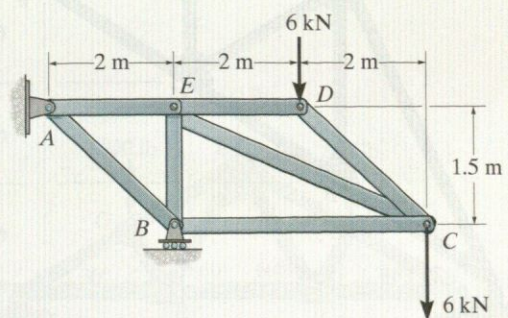
Prob. 3-16

**3-15.** Determine the force in each member of the truss. State if the members are in tension or compression. Assume all members are pin connected.



Prob. 3-15

**3-17.** Determine the force in each member of the truss. State if the members are in tension or compression.

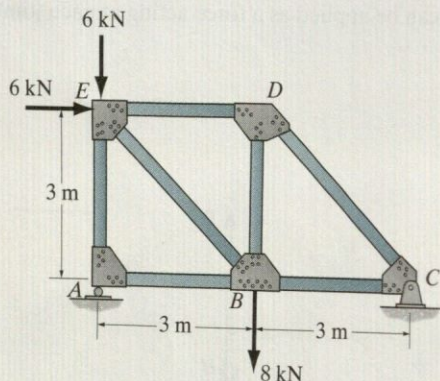


Prob. 3-17



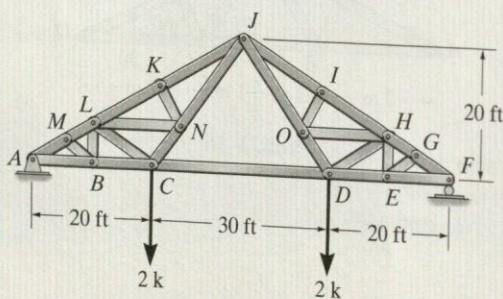
Sec. 3.5-3.6

3-18. Determine the force in members  $ED$ ,  $BD$  and  $BC$  of the truss and indicate if the members are in tension or compression.



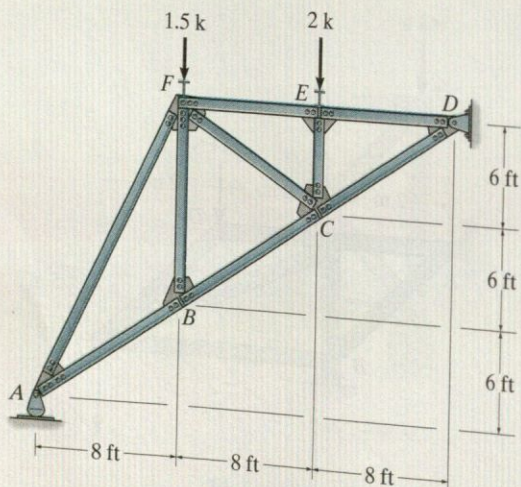
Prob. 3-18

3-19. Determine the force in members  $JK$ ,  $JN$ , and  $CD$ . State if the members are in tension or compression. Identify all the zero-force members.



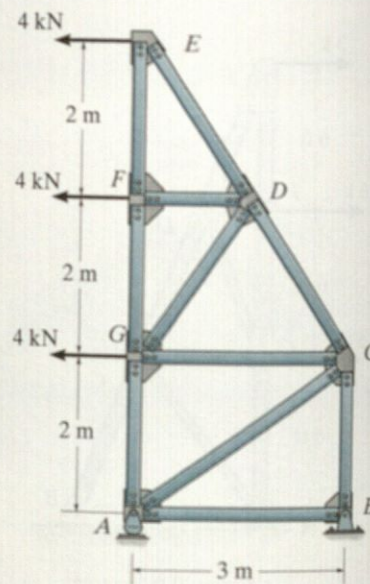
Prob. 3-19

\*3-20. Determine the force in members  $FC$ ,  $BC$ , and  $FE$ . State if the members are in tension or compression. Assume all members are pin connected.



Prob. 3-20

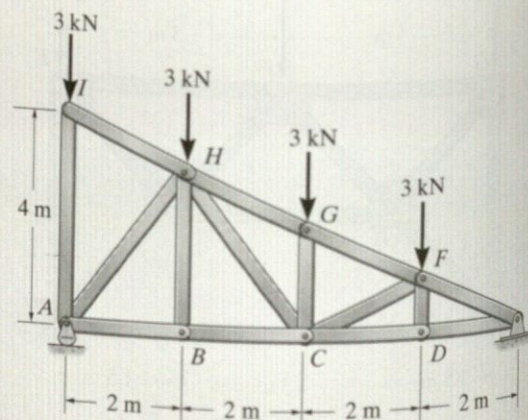
3-21. Determine the force in members  $FG$ ,  $GD$ ,  $CD$  and  $GA$  of the truss. State if the members are in tension or compression.



Prob. 3-21

3-22. Determine the force in members  $HG$ ,  $HC$ ,  $HB$  and  $AB$  of the truss. State if the members are in tension or compression. Assume all members are pin connected.

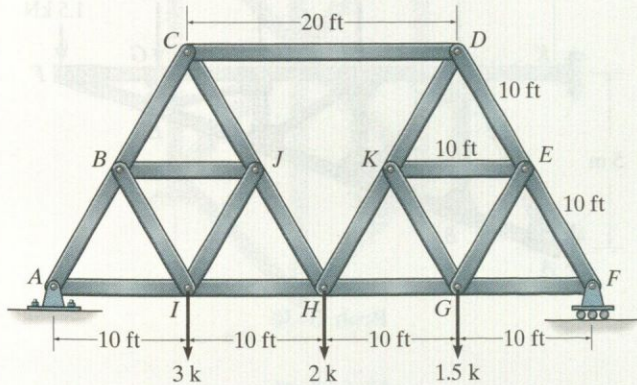
3-23. Determine the force in members  $GF$ ,  $GC$ ,  $HC$  and  $BC$  of the truss. State if the members are in tension or compression. Assume all members are pin connected.



Probs. 3-22/23

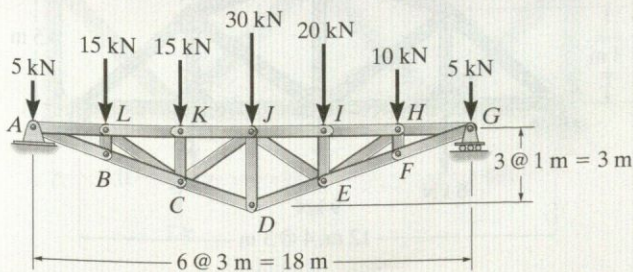


**\*3-24.** Specify the type of compound truss and determine the force in members  $JH$ ,  $BJ$ , and  $BI$ . State if the members are in tension or compression. The internal angle between any two members is  $60^\circ$ . The truss is pin supported at  $A$  and roller supported at  $F$ . Assume all members are pin connected.



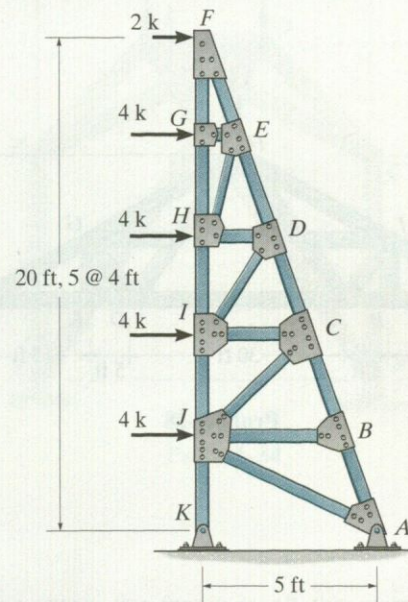
**Prob. 3-24**

**3-25.** Determine the forces in members  $JI$ ,  $JD$ , and  $DE$  of the truss. State if the members are in tension or compression.



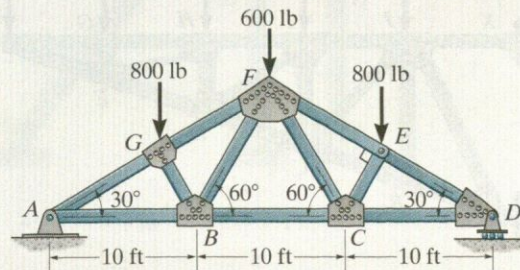
**Prob. 3-25**

**3-26.** Determine the force in members  $HI$ ,  $ID$ , and  $DC$  of the truss and state if the members are in tension or compression.



**Prob. 3-26**

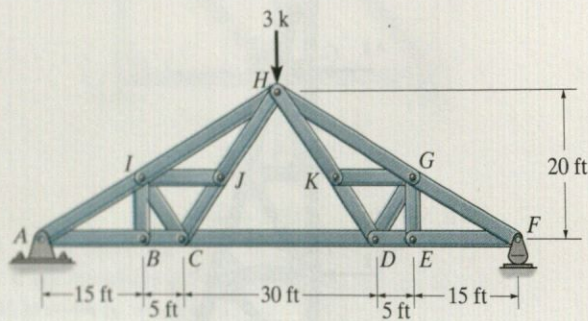
**3-27.** Determine the force in members  $GF$ ,  $FB$ , and  $BC$  of the Fink truss and state if the members are in tension or compression.



**Prob. 3-27**

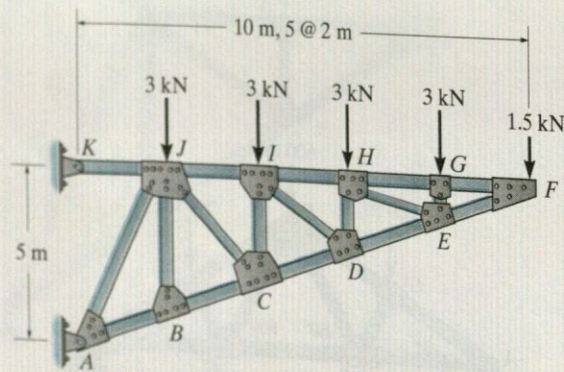


\*3-28. Specify the type of compound truss and determine the forces in members  $JH$ ,  $IH$ , and  $CD$ . State if the members are in tension or compression. Assume all members are pin connected.



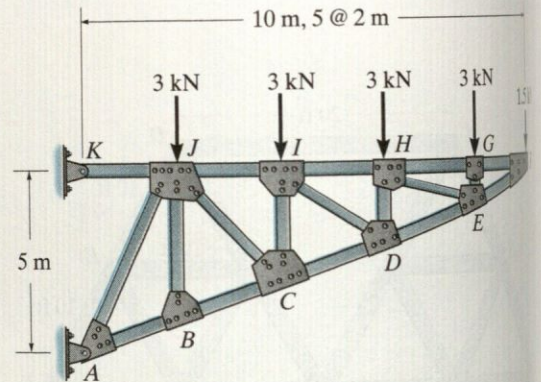
Prob. 3-28

3-29. Determine the force in members  $IH$ ,  $ID$ , and  $CD$  of the truss. State if the members are in tension or compression. Assume all members are pin connected.



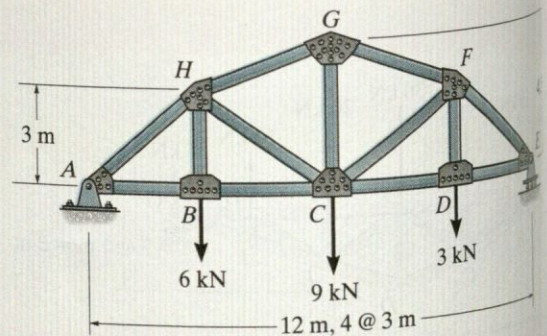
Prob. 3-29

3-30. Determine the force in members  $JI$ ,  $IC$ , and  $CD$  of the truss. State if the members are in tension or compression. Assume all members are pin connected.



Prob. 3-30

3-31. Determine the forces in members  $GH$ ,  $HC$ , and  $CD$  of the truss. State if the members are in tension or compression. Assume all members are pin connected.



Prob. 3-31

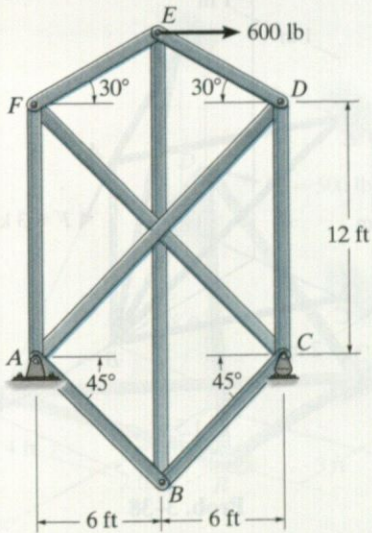
Sec.

\*3-32. comp  
compr  
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lattic  
or con  
betwe



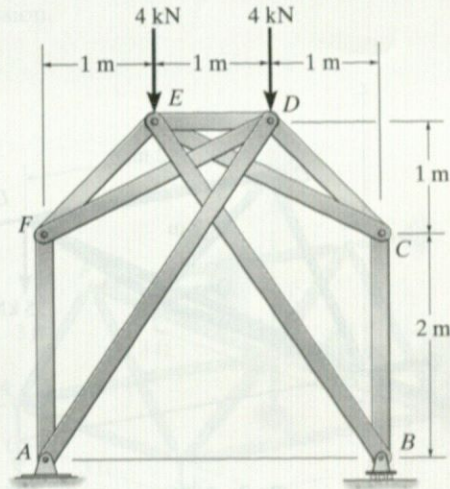
Sec. 3.7

**\*3-32.** Determine the forces in all the members of the complex truss. State if the members are in tension or compression. *Hint:* Substitute member  $AD$  with one placed between  $E$  and  $C$ .



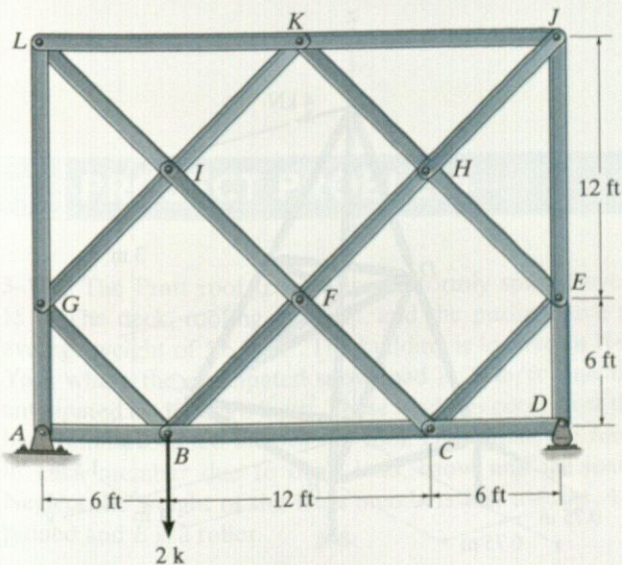
Prob. 3-32

**3-34.** Determine the force in each member and state if the members are in tension or compression.



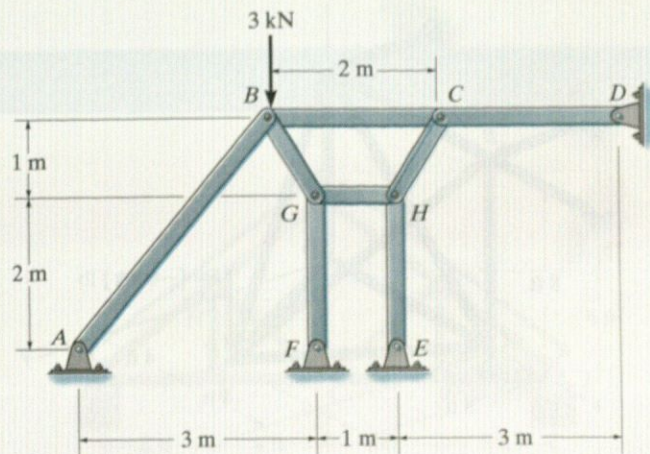
Prob. 3-34

**3-33.** Determine the forces in all the members of the lattice (complex) truss. State if the members are in tension or compression. *Hint:* Substitute member  $JE$  by one placed between  $K$  and  $F$ .



Prob. 3-33

**3-35.** Determine the forces in all the members of the complex truss. State if the members are in tension or compression. *Hint:* Substitute member  $AB$  with one placed between  $C$  and  $E$ .



Prob. 3-35

3