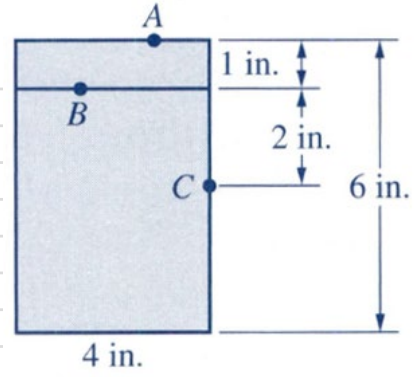14-21

The beam of rectangular section in Fig. P14-21 is subjected to a maximum shear force of 1900 lb. Determine the shear stresses at points A, B, and C.
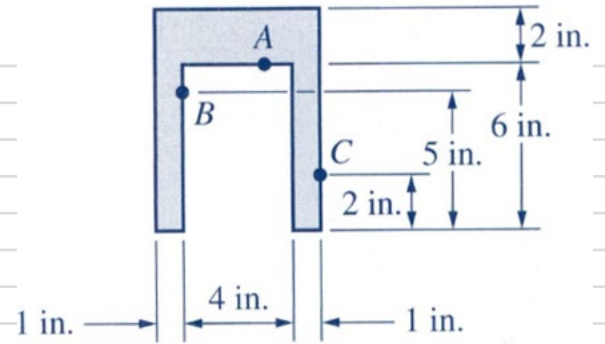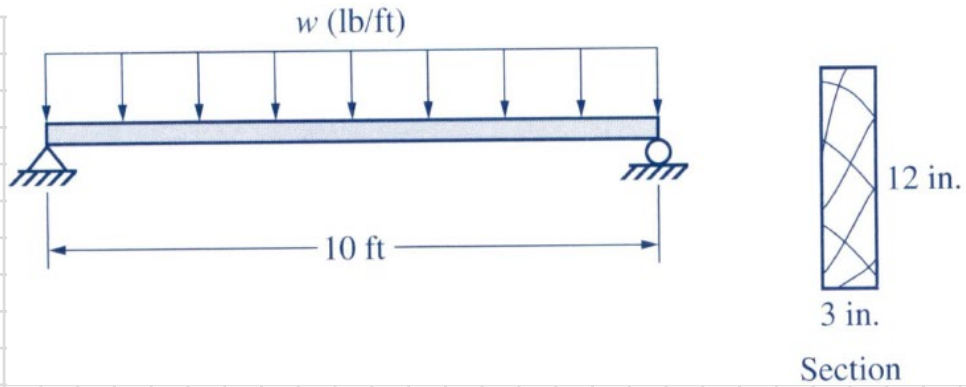
Solution

A

1 in.

B

2 in.

C

6 in.

4 in.

14-23

A beam having the channel section shown in Fig. P14-23 is subjected to a maximum shear force of 10 kips.
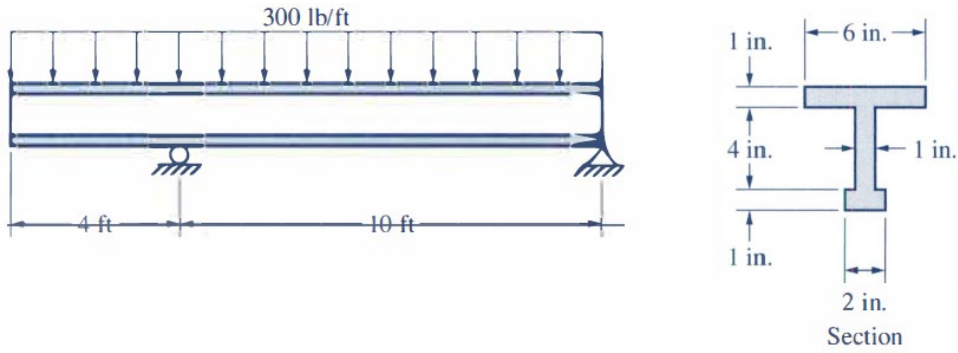Determine the shear stresses at points A, B, and C.

Solution.

14-25

A simple beam having the full-size rectangular section shown in Fig. P14-25 carries a uniform load. The beam is made of oak with an allowable flexural stress of 1900 psi and an allowable longitudinal shear stress (parallel to the grain) of 145 psi. Determine the maximum superimposed uniform load w in lb/ft that can be applied to the beam.

Solution.

w (lb/ft)

10 ft

12 in.

3 in.

Section

14-28

Determine the maximum shear stress in the beam shown in Fig. P14-13.

300 lb/ft

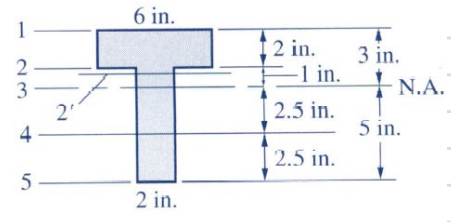4 ft

10 ft

1 in.

4 in.

1 in.

6 in.

1 in.

2 in.

Section
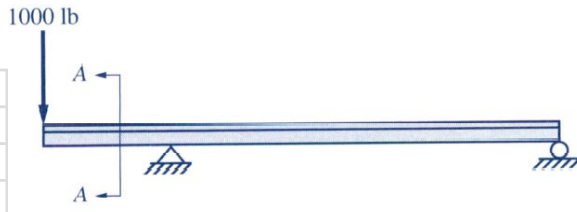
Solution.

14-29

An overhanging beam having a T-section ($I = 136$ in.^{4}) is subjected to the concentrated load shown in Fig. P14-29. Determine the shear stresses in section A-A at the levels indicated. Show the distribution of shear stresses in the section with figures similar to those in Example 14-7.

Solution.

Section A-A