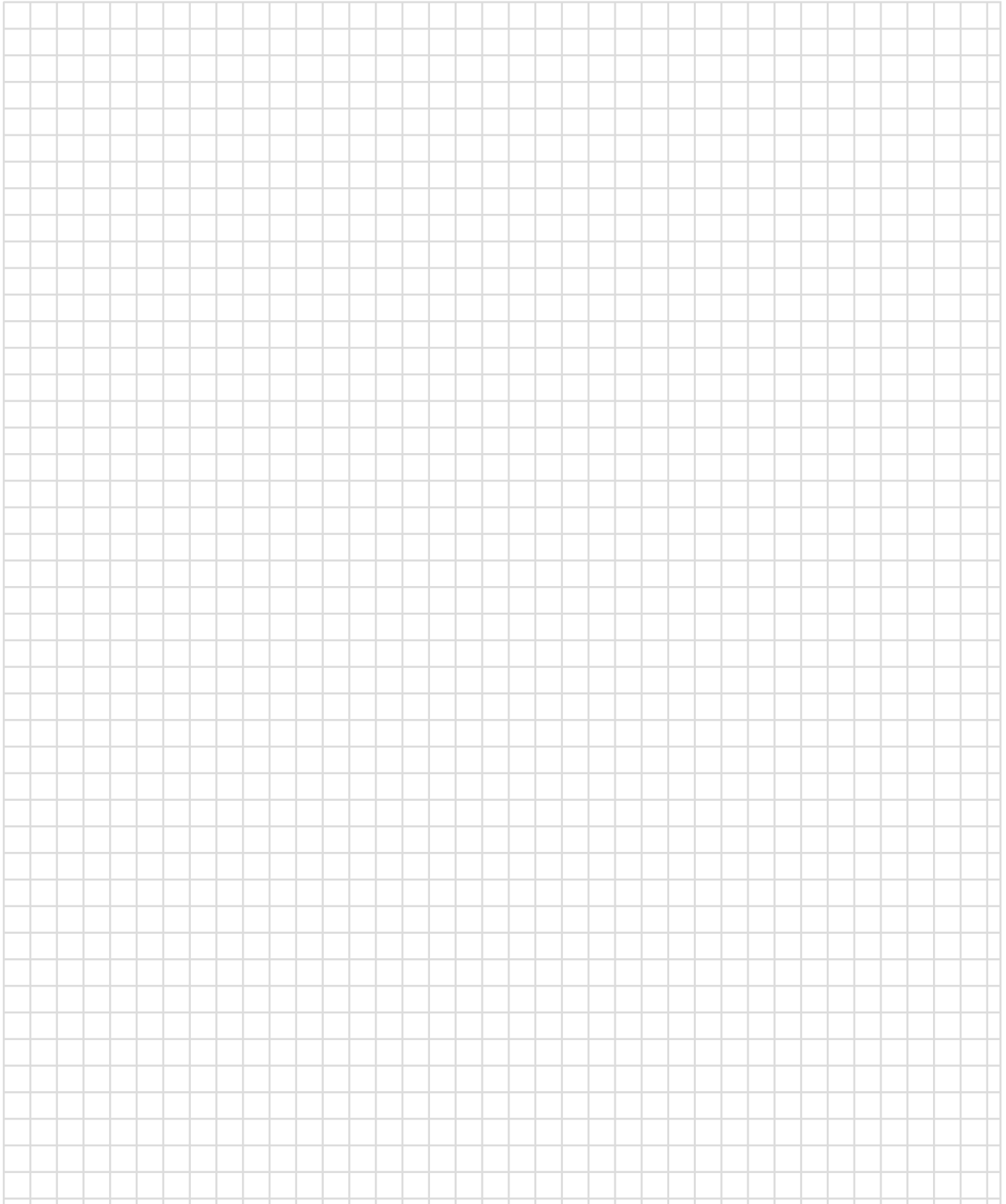14-1

A timber beam has a 10-ft simple span and a full rectangular section 4 in. wide and 6 in. deep. Determine the maximum flexural stress in the beam due to a concentrated load of 800 lb applied at the midspan.
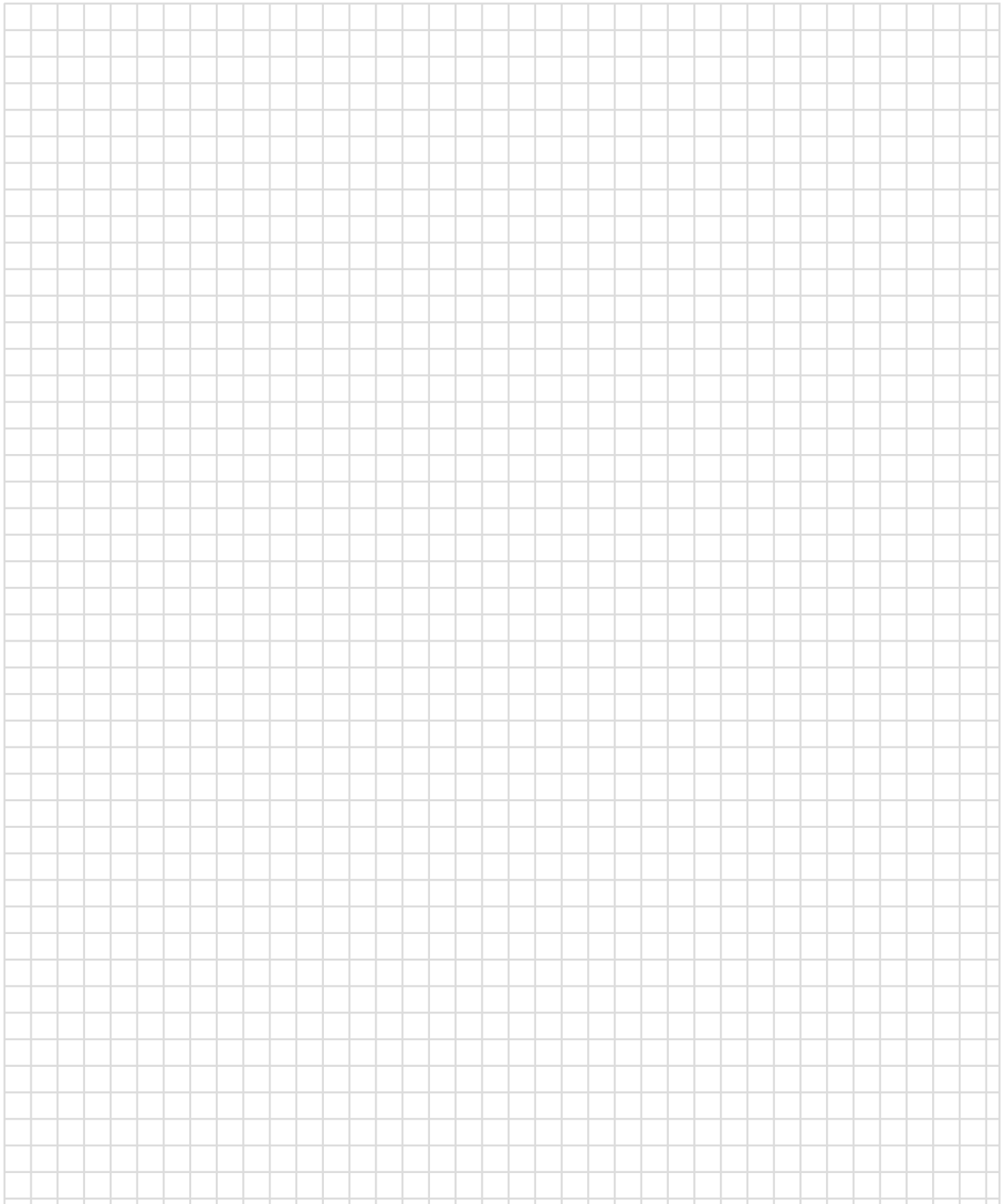
Solution.

14-5

A simple beam has a 24-ft span and a W16 x 50 section. Determine the max-imum flexural stress due to two concentrated loads of 20 kips each applied at the third points along the beam.
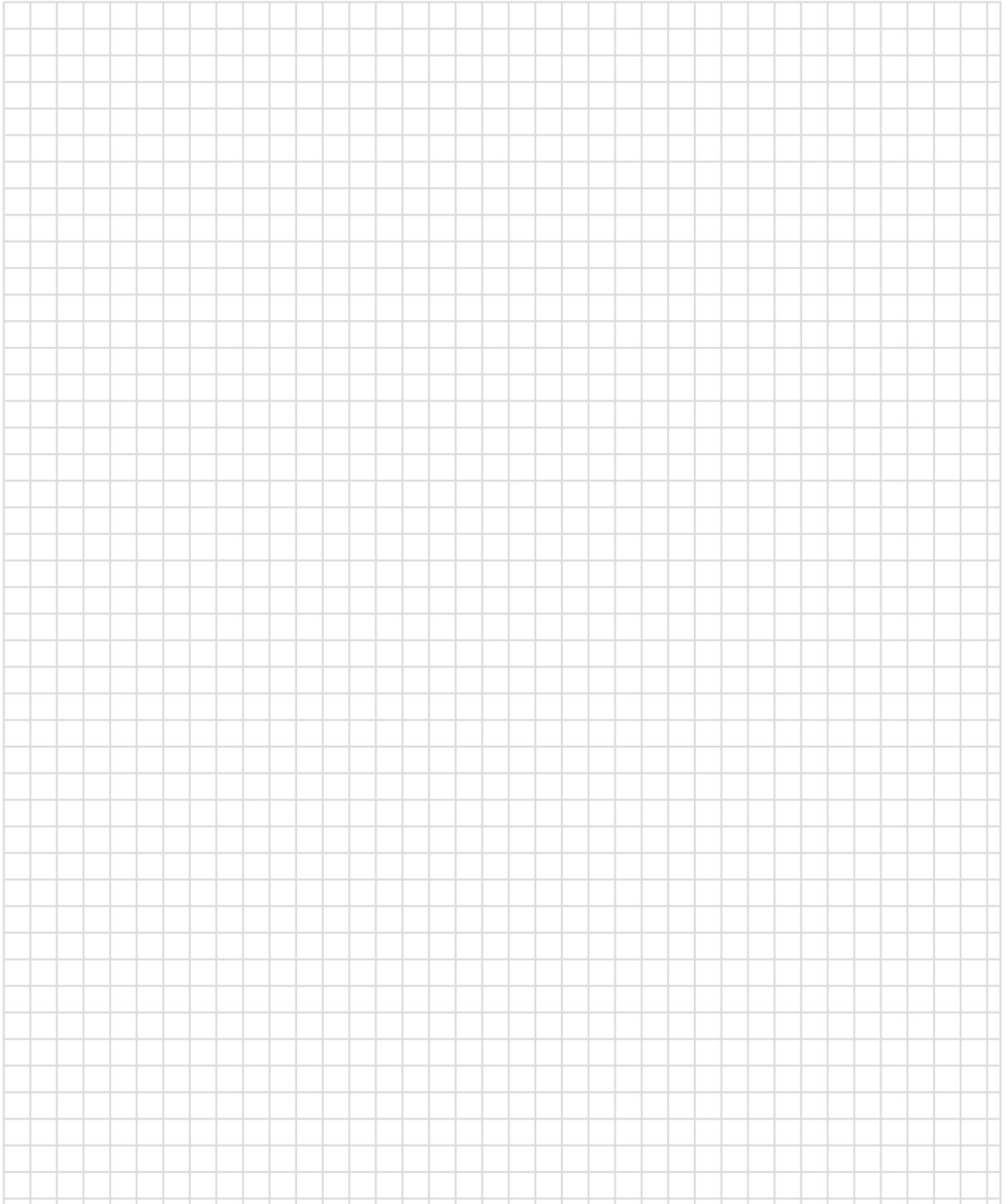
Solution.

14-8

A log of 10-in. average diameter is used in a simple span of 15 ft. Determine the maximum normal stress in the log caused by a uniform load of 200 lb/ft.
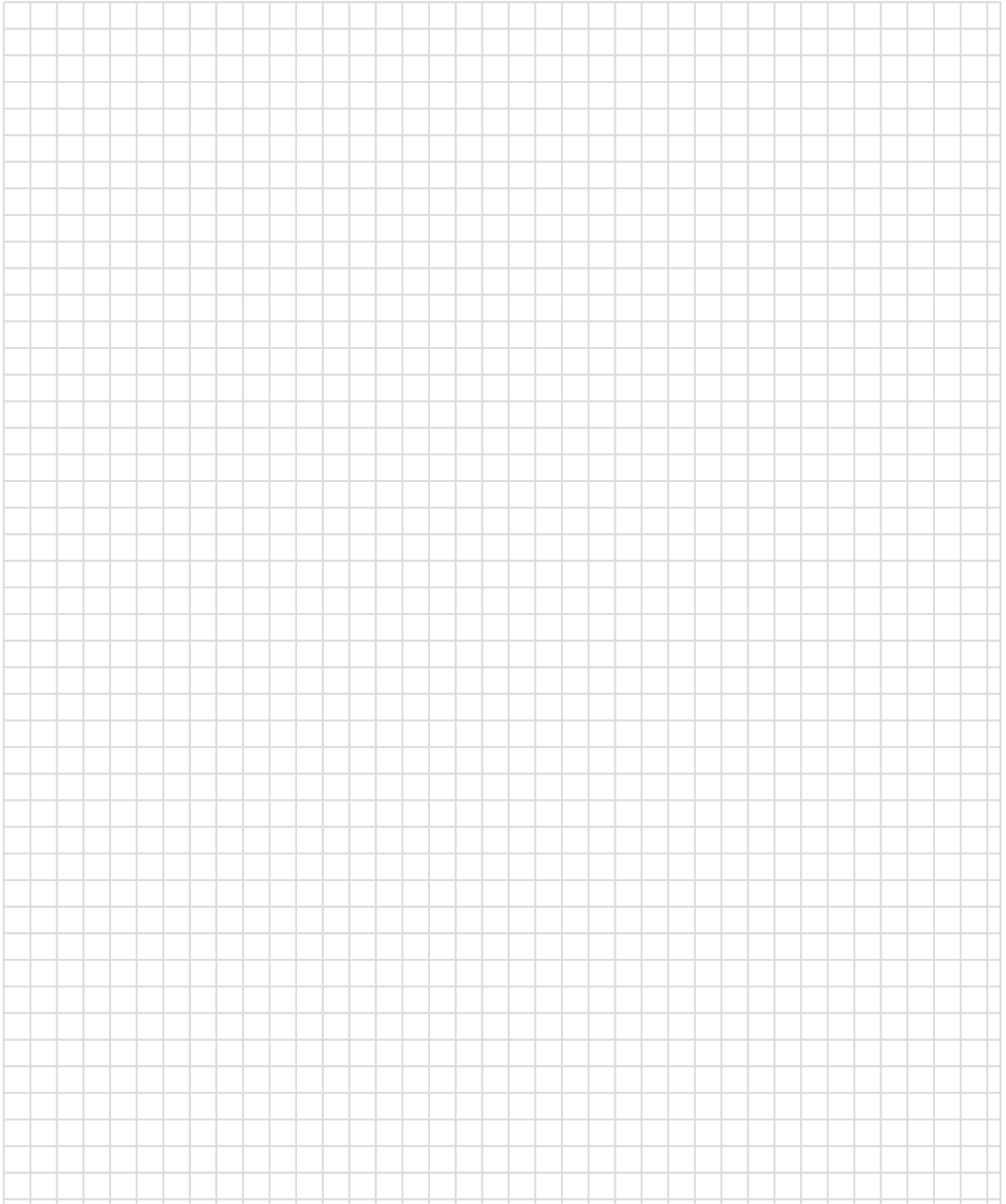
Solution,

14-9

A simple beam has an 18-ft span and a W18 x 50 section. Determine the maximum flexural stress due to two concentrated loads of 10 kips each applied at the third points of the span and a uniform load of 3 kips/ft (including the weight of the beam) over the entire length of the beam.
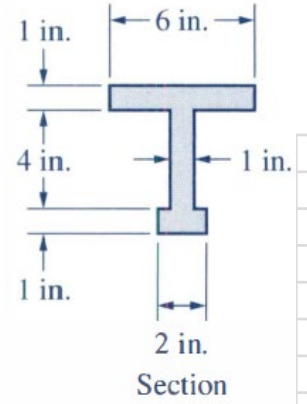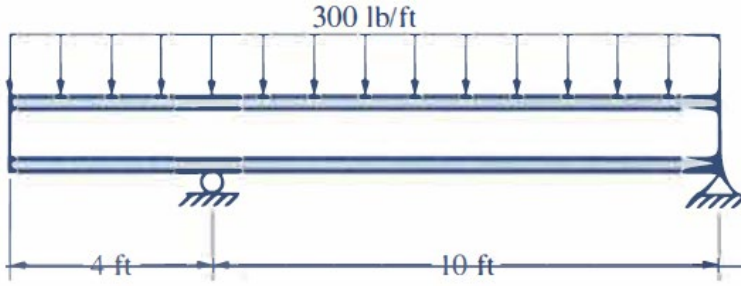
Solution.

14-13

See Fig. P14-13. Determine the maximum tensile and compressive stresses in the beam due to the loading shown.

300 lb/ft

1 in.

6 in.

4 in.

1 in.

1 in.

2 in.

Section

4 ft

10 ft

Solution.