

Problem 1

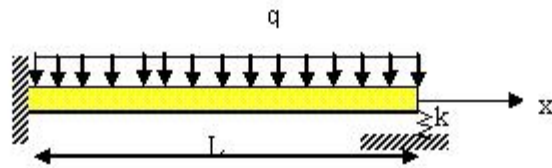


Fig. 1.1

The beam of flexural rigidity EI and length L in Fig. 1.1 is clamped at one end and elastically supported at other by a spring with stiffness ' k '. The beam is subjected to a uniformly distributed load of intensity q . Determine

- Deflection curve, slope, bending moment and shear force distributions.
- Plot shear force and bending moment diagram.
- Determine reactions at both supports.

Problem 3

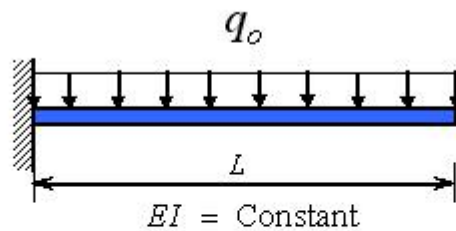


Figure 3.1

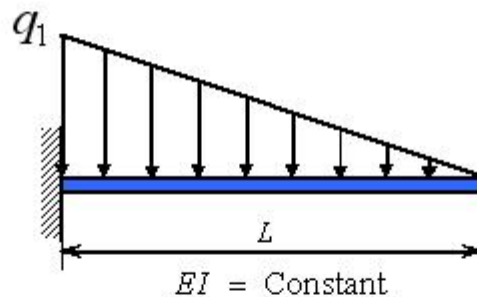


Figure 3.2

The cantilever beams shown in Figures 3.1 and 3.2 are subjected to distributed loads with intensities q_0 and q_1 N/m, respectively. Determine the ratio of q_0/q_1 if the maximum deflection due to load q_0 is three times the maximum deflection due to q_1 .

Problem 4

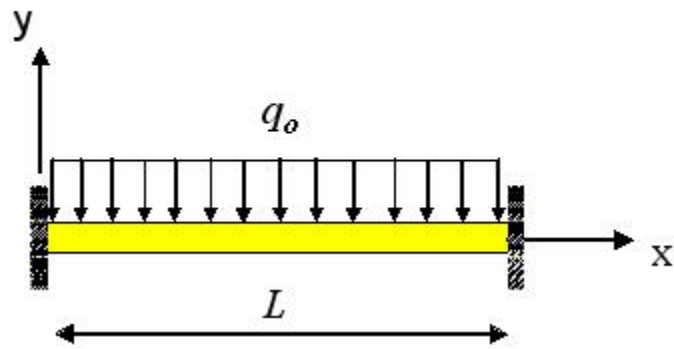


Figure 4

A fixed end beam is subjected to a constant distributed load q_0 .

Determine and plot:

- i) The deflection curve
- ii) The slope curve
- iii) Bending moment distribution
- iv) Shear force distribution