

Assignment # 5

Due date: Week of 10-10-2016

**Question 1 (12 Marks)**

Use Castigliano's second theorem to determine the vertical and horizontal deflections at joint B of the truss shown in Figure (1).

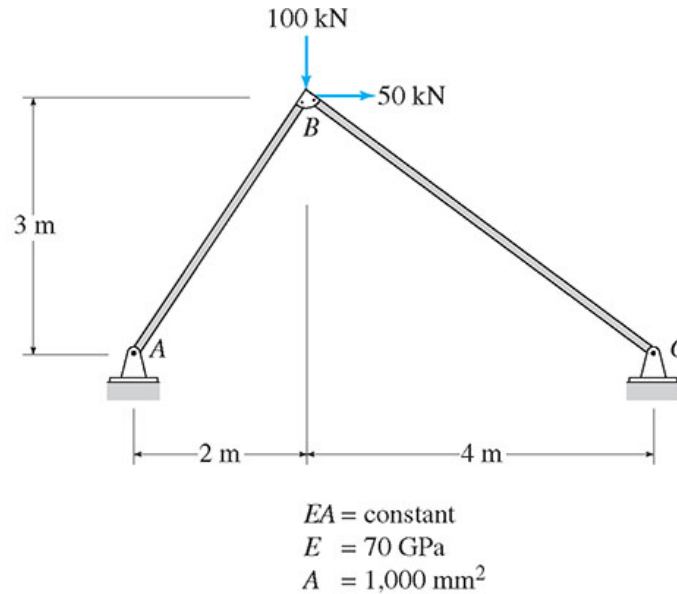


FIG. P7.2, P7.52

**Figure (1)**

**Question 2 (14 Marks)**

- Use Castigliano's second theorem to determine the slope and the vertical deflection at point D of the beam shown in Figure (2).
- If the concentrated load (120 kN) at point B is removed and a load of 240 kN is placed at point D, what will be the vertical deflection at point B?

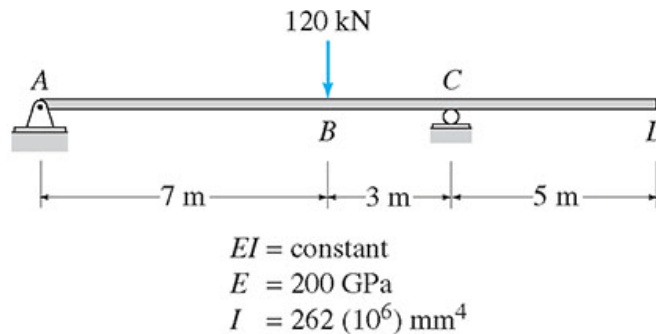


FIG. P7.34, P7.63

**Figure (2)**

### Question 3 (14 Marks)

Use Castigliano's second theorem to determine the horizontal deflection at joint C of the frame shown in Figure (3).

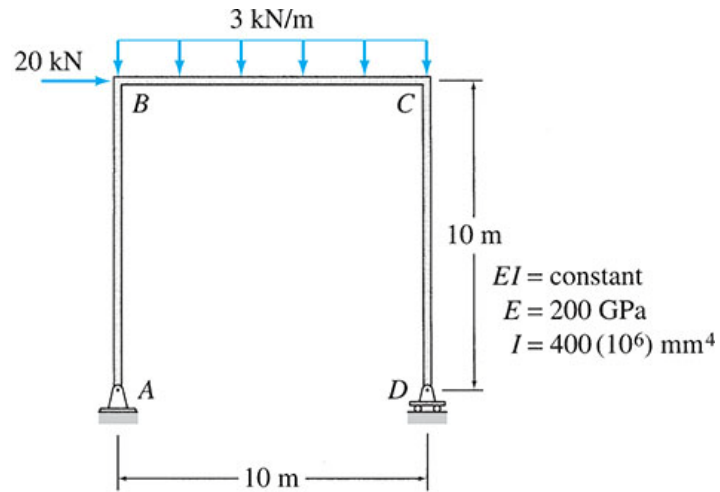


FIG. P7.45, P7.68

Figure (3)