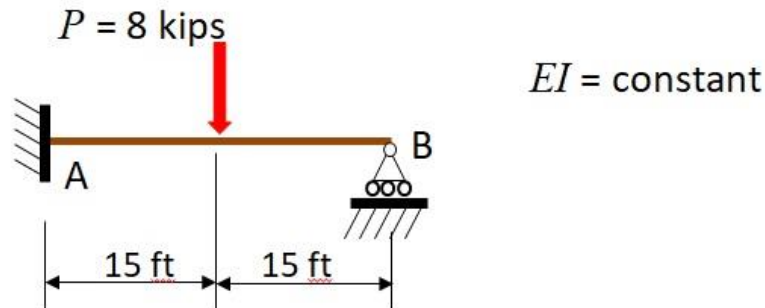




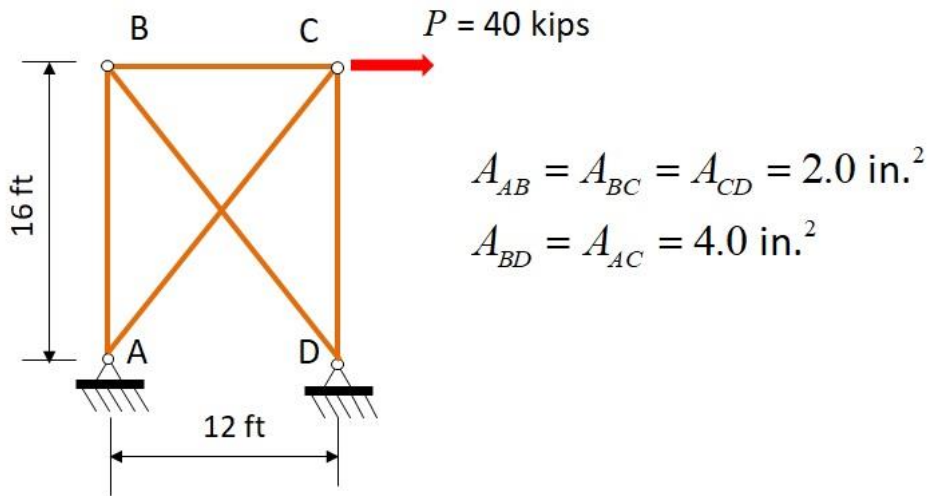
### Problem 1



1. Using the conjugate beam method, the moment at the fixed support on the propped cantilever shown is approximately:
  - a. 45 ft-kips
  - b. 60 ft-kips
  - c. 80 ft-kips
  - d. 90 ft-kips
  - e. None of these are correct.
2. When a structure is indeterminate it can be solved by the general method which involves which of the following?
  - a. Removing all the reactions on the structure.
  - b. Determining the displacements that correspond to the removed redundants.
  - c. Calculating deflections due to unit loads.
  - d. a and b
  - e. b and c
3. A beam with three “extra” reactions is said to be 3 degrees indeterminate. To use the method of consistent deflections, how many deflections must be calculated if you apply Maxwell’s Law of Reciprocal deflections?
  - a. 3
  - b. 6
  - c. 9
  - d. 12
  - e. It depends on the selected redundants.



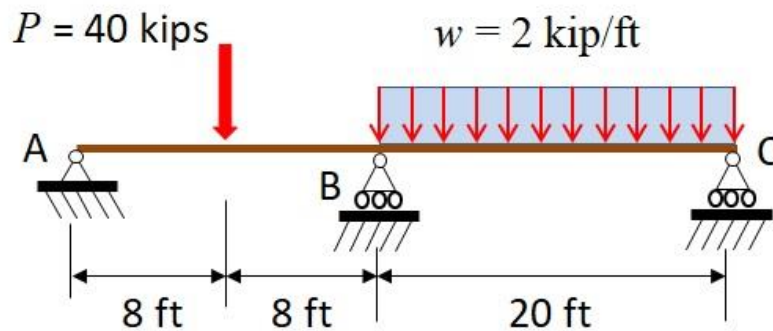
Problem 4



4. Using the general method, the force in member BD is approximately:

- a. 22.6 kips T
- b. 30.1 kips C
- c. 40.8 kips C
- d. 29.1 kips C
- e. None of these are correct.

Problem 5



5. Using the general method, the moment in the beam at support B is approximately:

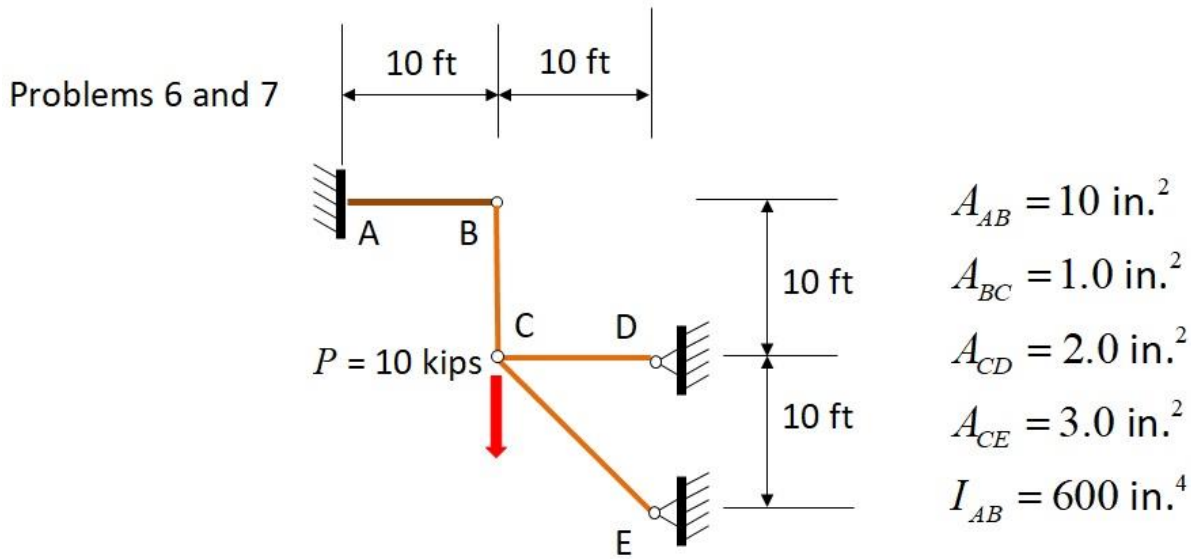
- a. 50.8 ft-kips
- b. 109 ft-kips
- c. 218 ft-kips
- d. 1307 ft-kips
- e. None of the above



Classical Methods of Structural Analysis

Quiz for Session 5: Indeterminate Structures and the General Method – July 15, 2019

Due: August 5, 8:00 a.m. EDT – Submit through the online form



6. Using the general method, the force in member BC is approximately:

- a. 1.80 kips
- b. 5.90 kips
- c. 0.76 kips
- d. 1.38 kips
- e. None of the above

7. For the structure of Problem 6, if you ignored the flexure in the beam, the force in member BC is approximately:

- a. 1.80 kips
- b. 5.90 kips
- c. 0.76 kips
- d. 1.38 kips
- e. None of the above

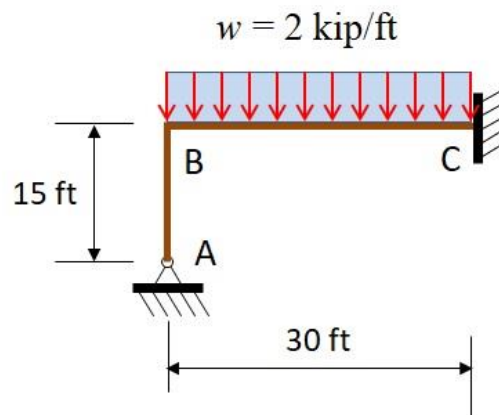


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Problems 8, 9 and 10



The frame is composed of a W16x31

8. The structure for Problem 8 is 2 degrees indeterminate. Determine the vertical and horizontal reactions at A. The horizontal reaction at A is approximately:

- a. 12 kips
- b. 6.0 kips
- c. 27 kips
- d. 18 kips
- e. None of the above

9. For the structure of Problem 8, the vertical reaction at A is approximately:

- a. 12 kips
- b. 6.0 kips
- c. 27 kips
- d. 18 kips
- e. None of the above

10. For the structure of Problem 8, the moment at C is approximately:

- a. 180 ft-kips
- b. 0 ft-kips
- c. 90 ft-kips
- d. 810 ft-kips
- e. None of the above



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