Problem 1

1. Using the slope deflection method, how many unknown must be determined for the frame shown?
   a. 2
   b. 4
   c. 6
   d. 8
   e. None of these are correct.
2. Using slope deflection, determine the moment at B, $M_{BA}$.
   a. 72.3 ft-kips
   b. -66.7 ft-kips
   c. 55.6 ft-kips
   d. 47.2 ft-kips
   e. None of these are correct.

3. A beam with a cantilever as shown is to be analyzed by slope deflection. The moment, $M_{BA}$ is:
   approximately
   a. 5 ft-kips
   b. 10 ft-kips
   c. 15 ft-kips
   d. 20 ft-kips
   e. None of these are correct.
4. For the beam of Problem 3, the moment $M_{AB}$ is approximately:
   a. 5 ft-kips
   b. 10 ft-kips
   c. 15 ft-kips
   d. 20 ft-kips
   e. None of these are correct.

5. Using slope deflection, determine which direction point B will move under the given load.
   a. Right
   b. Left
   c. No sway
   d. Depends on the load magnitude
   e. Not enough information provided
6. For the structure shown, use slope deflection to determine the approximate moment $M_{AB}$ if the frame is pulled to the right 1.0 in. at C.

   a. -135 ft-kips
   b. -96.4 ft-kips
   c. -57.8 ft-kips
   d. +19.3 ft-kips
   e. None of the above
7. The structure shown was addressed during Lesson 6. If only gravity load is applied as shown and no lateral load is applied, will the structure sway?
   a. yes
   b. no
   c. it depends on load magnitude
   d. yes, but only if the lower level is also loaded
   e. Not enough information is provided
8. For the structure shown, determine by slope deflection the approximate moment at E.
   a. -8.0 ft-kips
   b. 22.5 ft-kips
   c. -7.0 ft-kips
   d. 5.0 ft-kips
   e. None of the above

9. For the structure of Problem 8, the horizontal reaction at D is approximately:
   a. 0.19 kips to left
   b. 0.51 kips to right
   c. 1.65 kips to right
   d. 0.89 kips to right
   e. None of the above

10. For the structure of Problem 8, the rotation at B is approximately (in units of ft-kips):
    a. $1.27L_{AB}/EI$
    b. $-3.49L_{AB}/EI$
    c. 0
    d. $+3.49L_{AB}/EI$
    e. None of the above