



1. Which of the following must be considered when doing an analysis according to AISC 360-16?
 - a. All deformations
 - b. Second-order effects
 - c. Geometric imperfections
 - d. All of the above
 - e. None of the above

2. A second-order analysis includes:
 - a. equations of equilibrium written about the deformed geometry of the structure.
 - b. only the effects of lateral load.
 - c. only the effects of loads that vary with time.
 - d. the determination of buckling load first.
 - e. all of the above.

3. When doing a second-order analysis by double integration:
 - a. there is only one correct direction for writing the moment equation.
 - b. the constants of integration will depend on the definition of the variable x .
 - c. it will always require a least 5 determinations of deflection to reach an acceptable solution.
 - d. with careful selection of member properties, second-order effects can be completely eliminated.
 - e. None of these are true.

4. Slope deflection is normally thought of as a method for linear analysis of a structure. With the use of stability functions,
 - a. the influence of axial load on the flexural stiffness of the member can be included.
 - b. the three dimensional behavior of a member can be included.
 - c. the numerical coefficients in the member end moment equations can be varied as a function of the material properties.
 - d. All of the above are true.
 - e. None of these are true.



Classical Methods of Structural Analysis

Quiz for Session 8: Classical Approaches Applied To 2nd-order Analysis – August 5, 2019

Due: August 26, 8:00 a.m. EDT – Submit through the online form

5. The approximate second-order analysis according to AISC 360-16 Appendix 8 requires:
 - a. the use of moment distribution for the analysis.
 - b. that structures be symmetrical.
 - c. that all moments be amplified by a single amplification factor regardless of sway or non-sway.
 - d. All of the above are true.
 - e. None of these above are true.

6. When comparing classical methods to matrix methods, the slope deflection method is considered:
 - a. a flexibility method.
 - b. a stiffness method.
 - c. unrelated to matrix methods.
 - d. inadequate for analysis on any modern structure.
 - e. None of the above

7. When comparing classical methods to matrix methods, the general method is considered:
 - a. a flexibility method.
 - b. a stiffness method.
 - c. unrelated to matrix methods.
 - d. inadequate for analysis on any modern structure.
 - e. None of the above

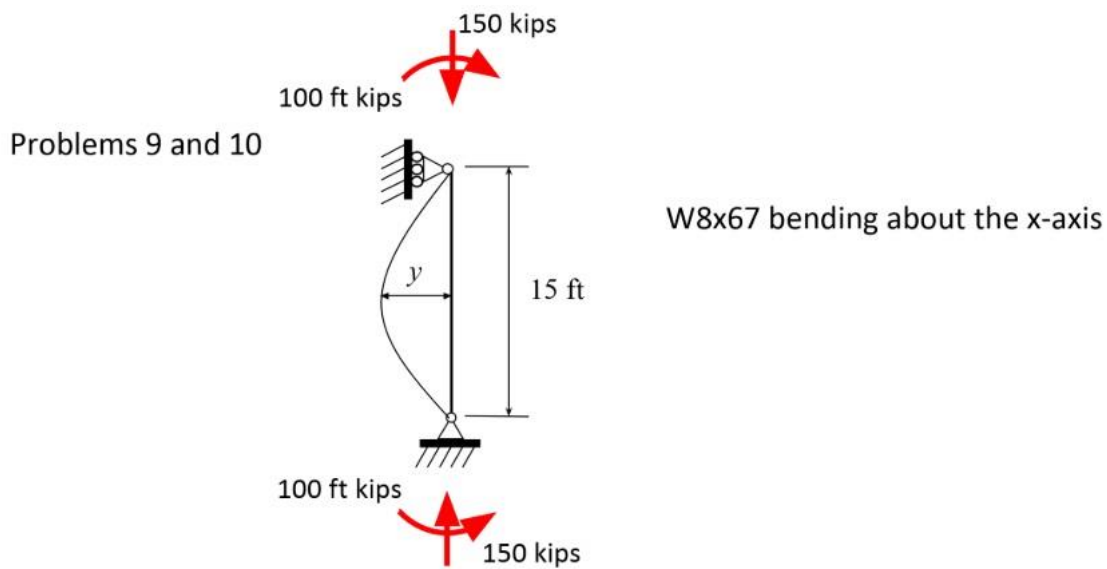
8. The advantage of the stiffness method over the slope deflection method is:
 - a. that the computer can be used for solution.
 - b. all deformations can be included as required by AISC 360-16.
 - c. non-prismatic members can be considered.
 - d. All of the above
 - e. None of the above



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9. For the given beam-column bending about the x-axis with loading shown as addressed in this lesson, the second-order moment amplification is approximately:

- a. 1.00
- b. 1.04
- c. 1.08
- d. 1.16
- e. 1.20

10. If the moment in Problem 9 is doubled, the second-order moment amplification is approximately:

- a. 1.00
- b. 1.04
- c. 1.08
- d. 1.16
- e. 1.20

