

Chapter 8

Columns

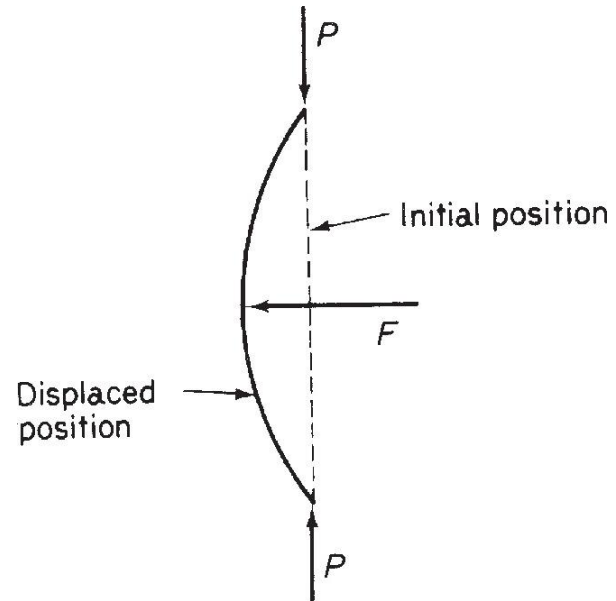


FIGURE 8.1 Definition of Buckling Load for a Perfect Column

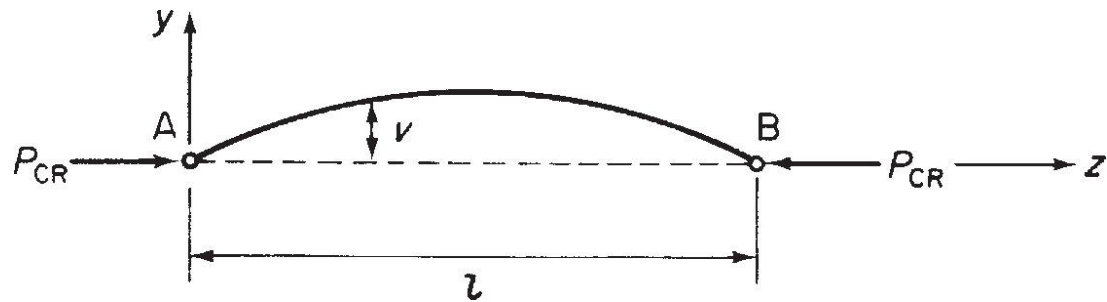


FIGURE 8.2 Determination of Buckling Load for a Pin-Ended Column

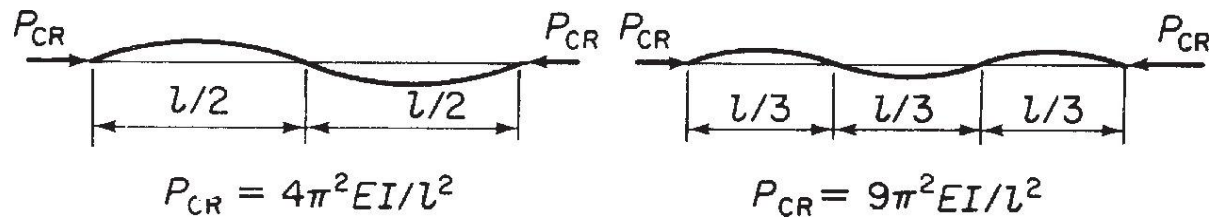


FIGURE 8.3 Buckling Loads for Different Buckling Modes of a Pin-Ended Column

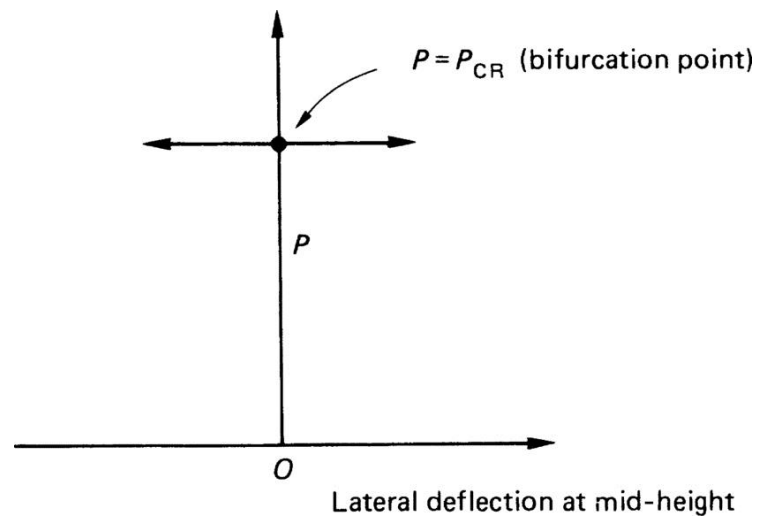


FIGURE 8.4 Behavior of a Perfect Pin-Ended Column

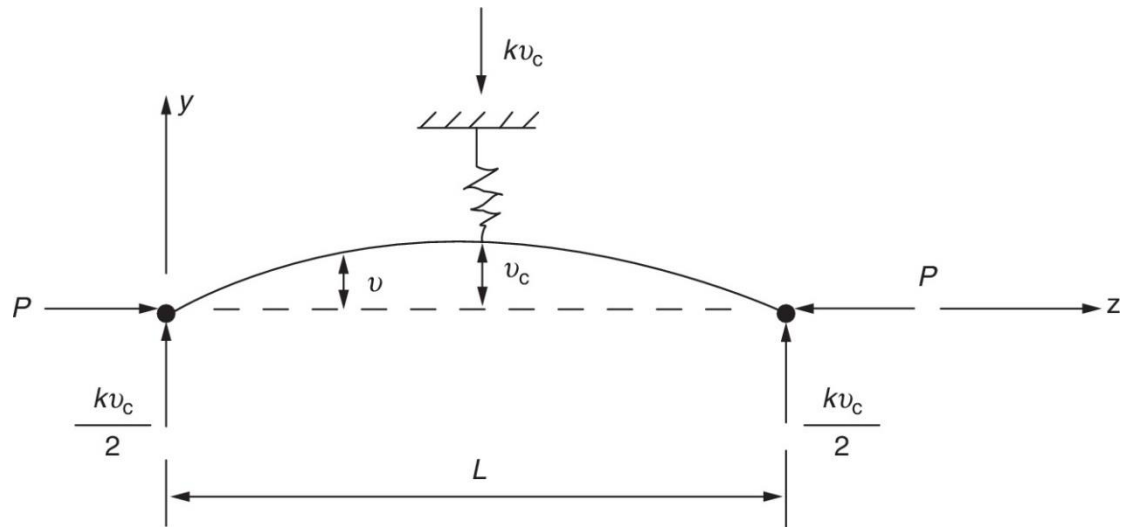


FIGURE 8.5 Column of Example 8.1

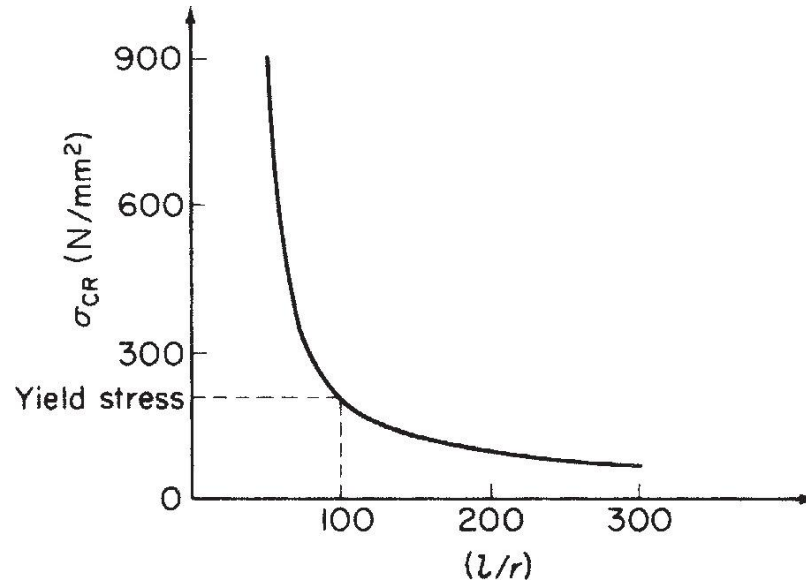


FIGURE 8.6 Critical Stress–Slenderness Ratio for a Column

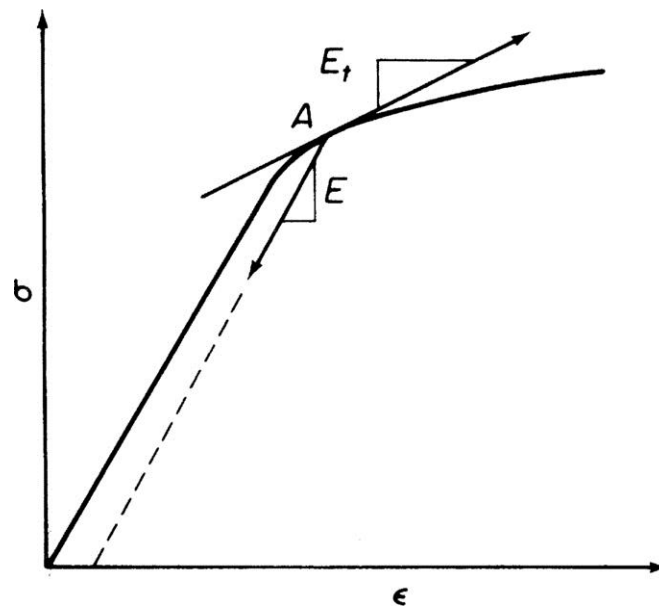


FIGURE 8.7 Elastic Moduli for a Material Stressed above the Elastic Limit

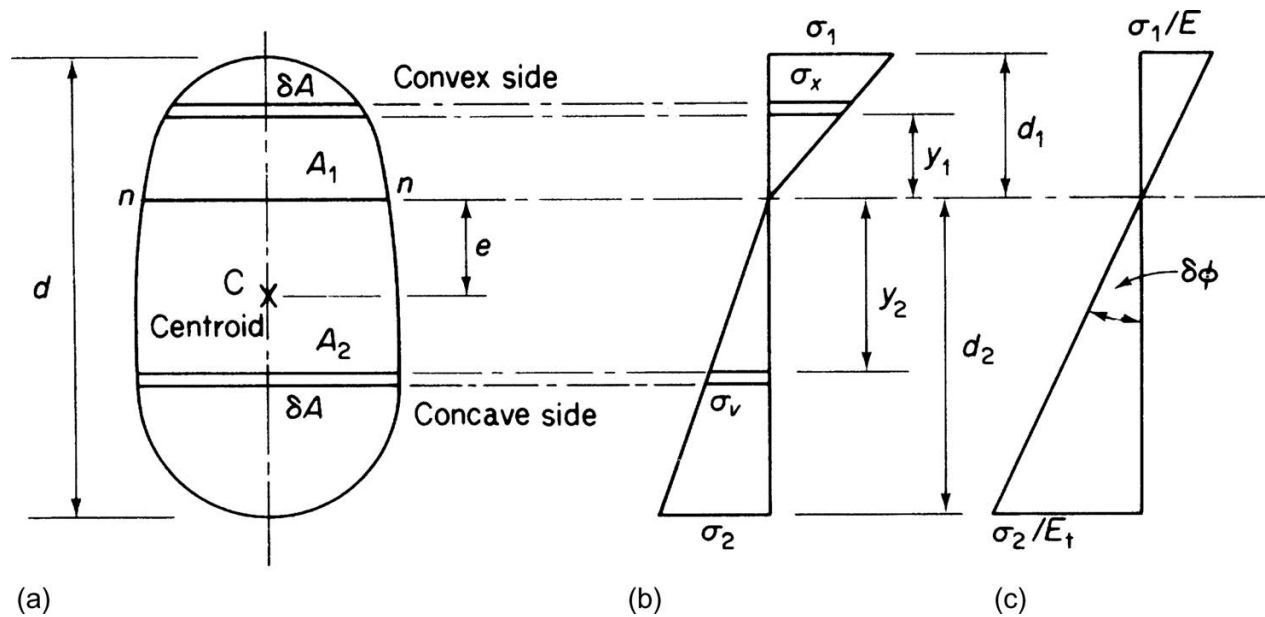


FIGURE 8.8 Determination of Reduced Elastic Modulus

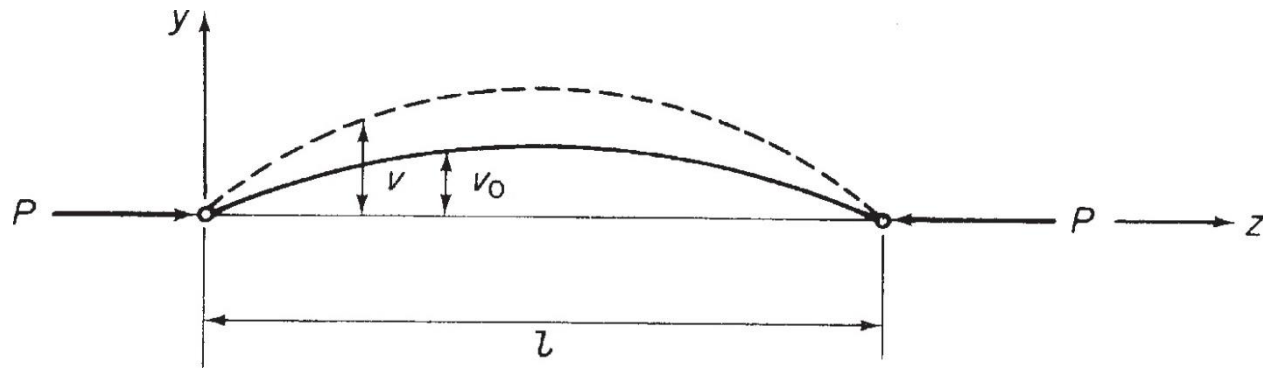


FIGURE 8.9 Initially Bent Column

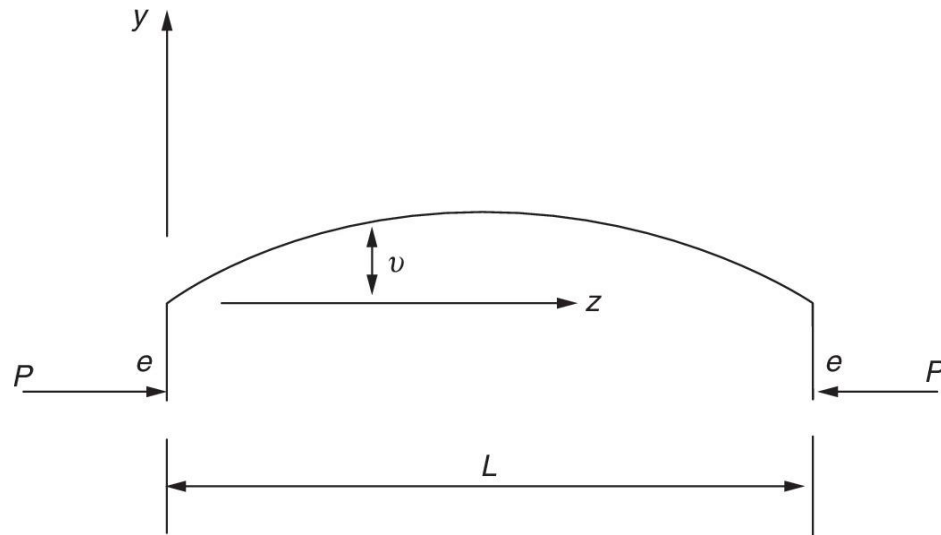


FIGURE 8.10 Eccentrically Loaded Column of Example 8.3.

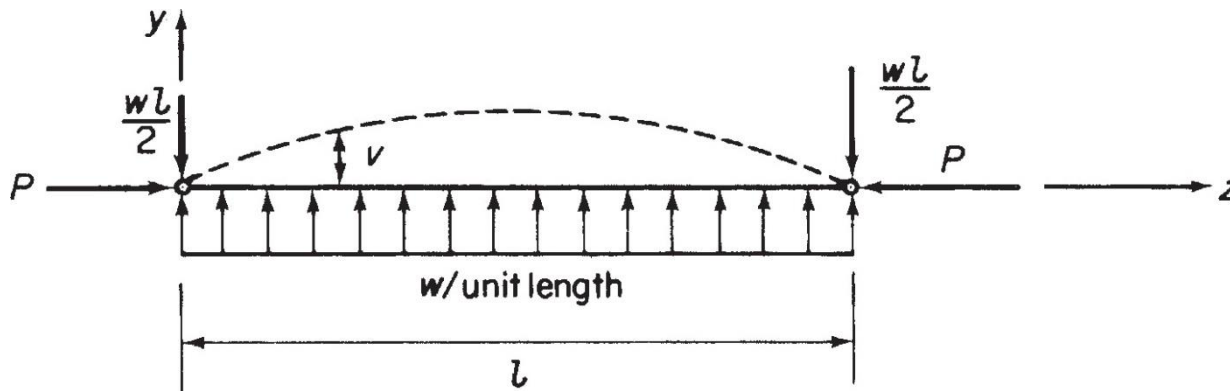


FIGURE 8.11 Bending of a Uniformly Loaded Beam-column

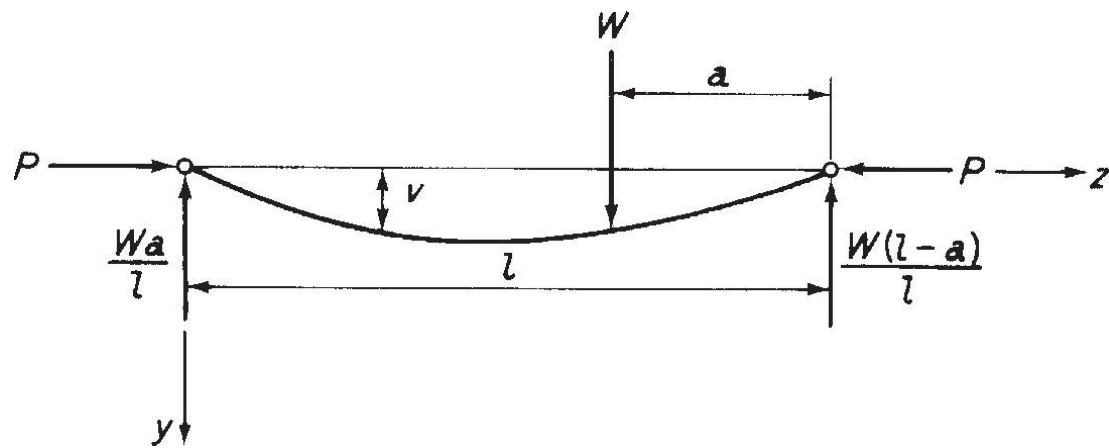


FIGURE 8.12 Beam-Column Supporting A Point Load

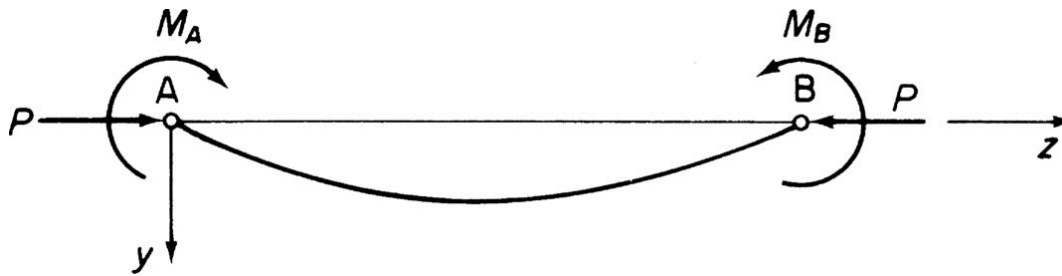


FIGURE 8.13 Beam-Column Supporting End Moments

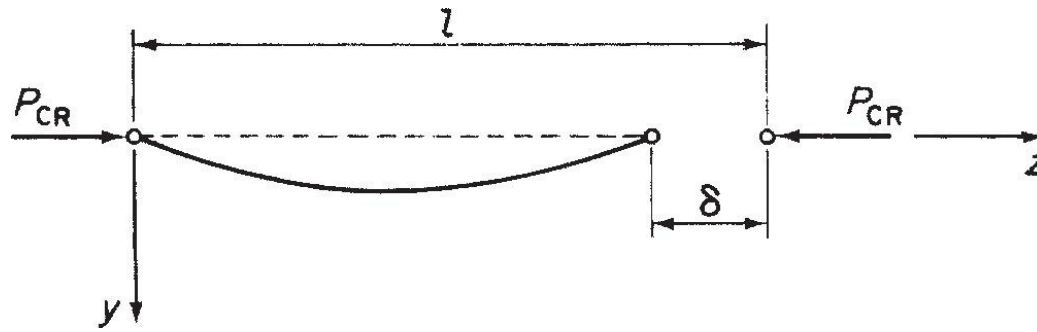


FIGURE 8.14 Shortening of a Column Due to Buckling

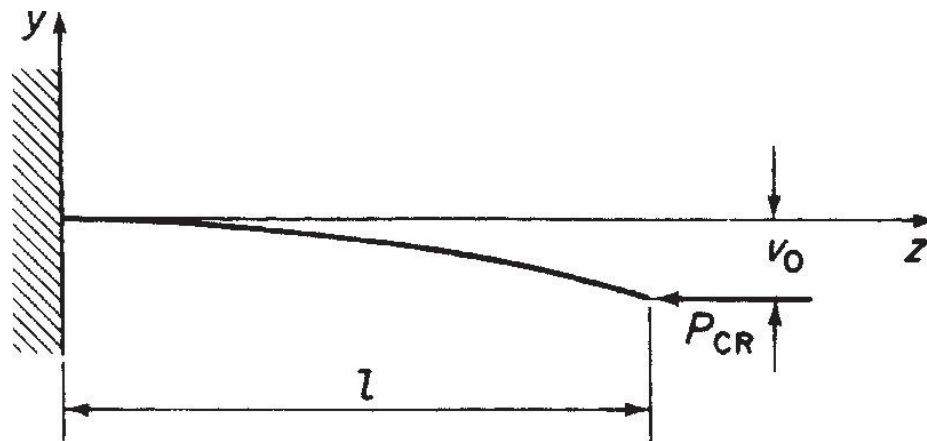


FIGURE 8.15 Buckling Load for a Built-in Column by the Energy Method

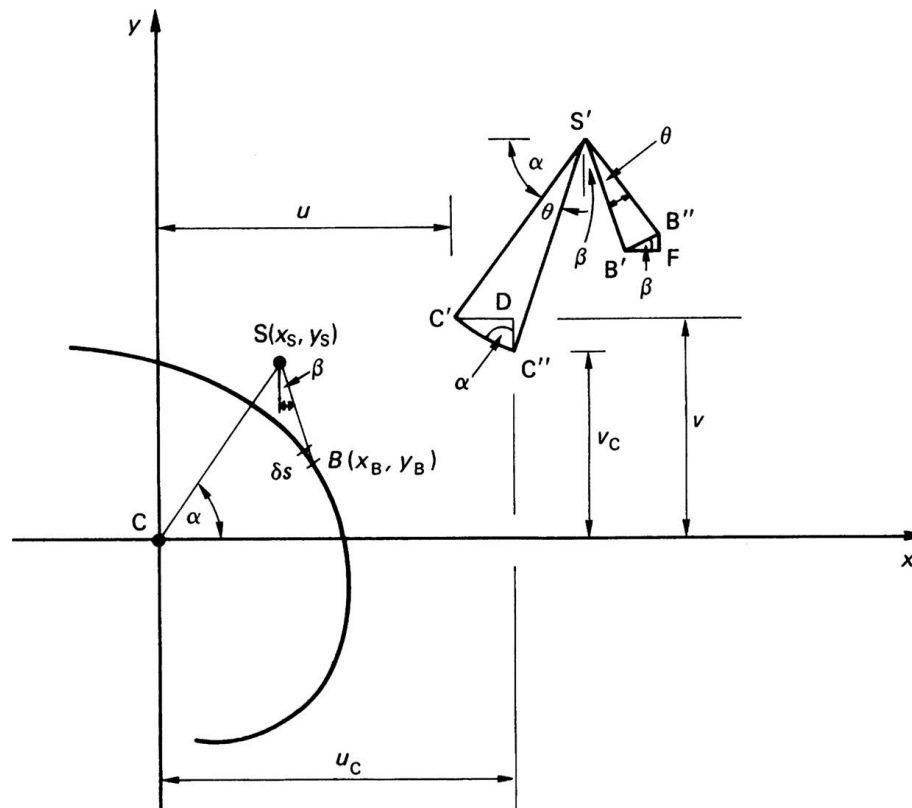


FIGURE 8.16 Flexural–Torsional Buckling of a Thin-Walled Column

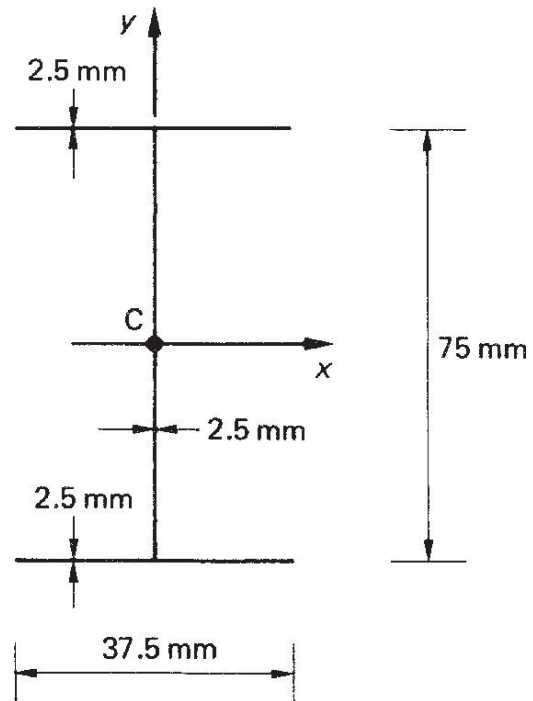


FIGURE 8.17 Column Section of Example 8.4

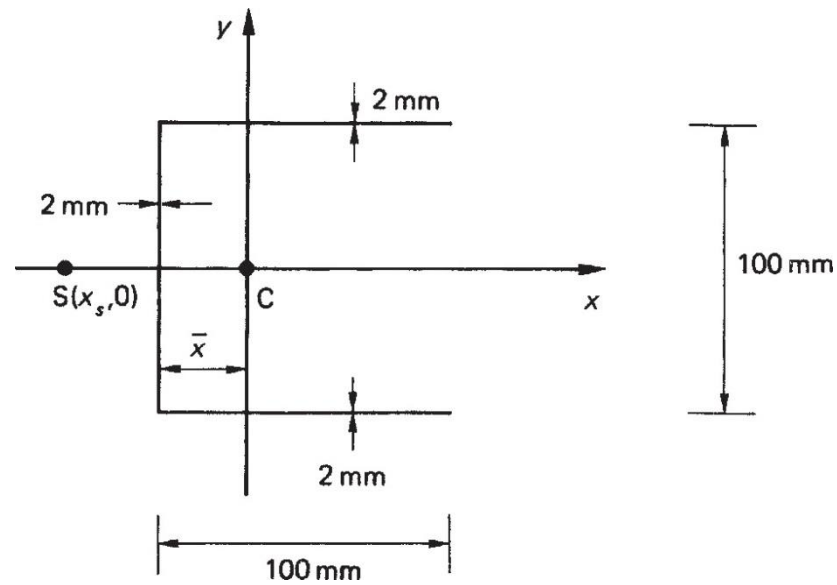


FIGURE 8.18 Column Section of Example 8.5

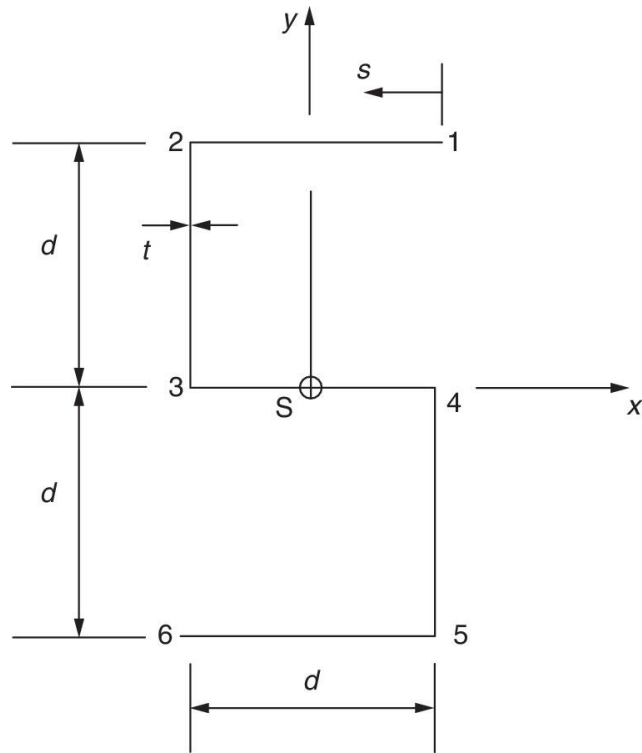


FIGURE 8.19 Section of Column of Example 8.6

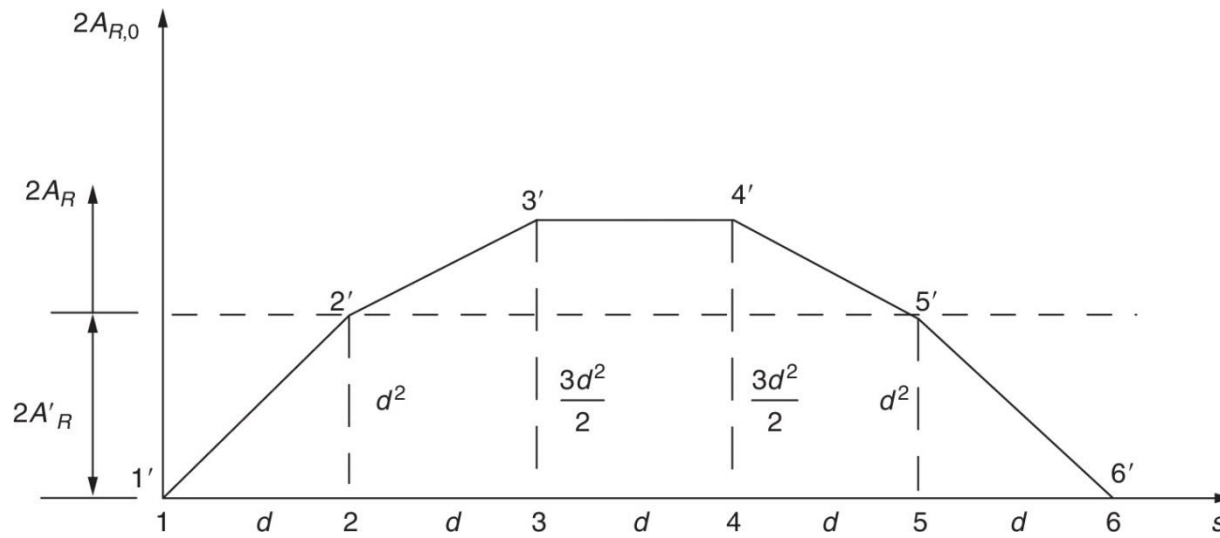


FIGURE 8.20 Determination of Torsion Bending Constant for Column Section of Example 8.6

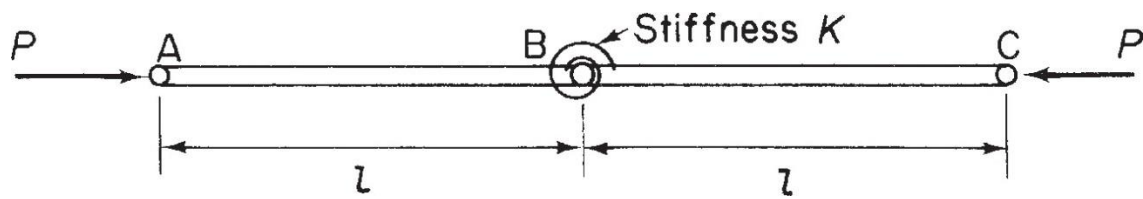


FIGURE P.8.1

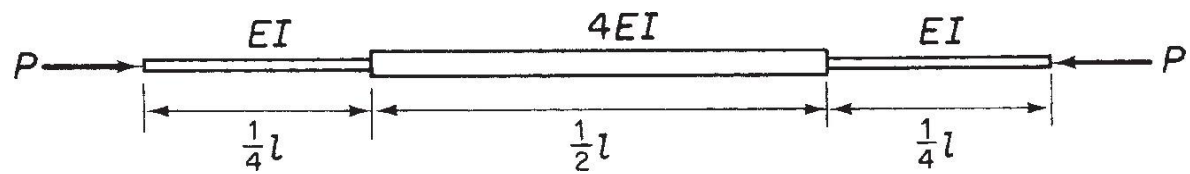


FIGURE P.8.2

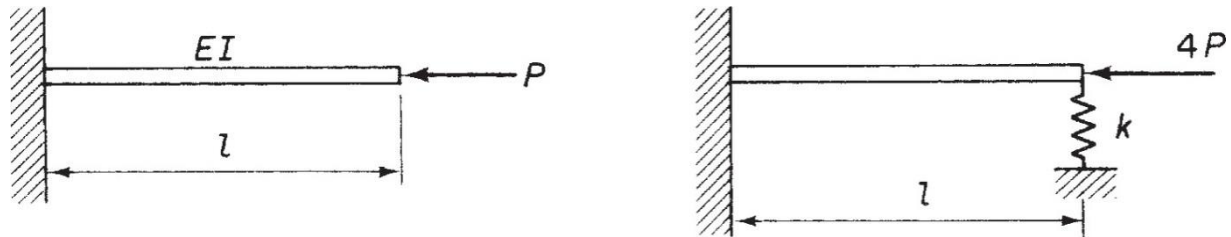


FIGURE P.8.3

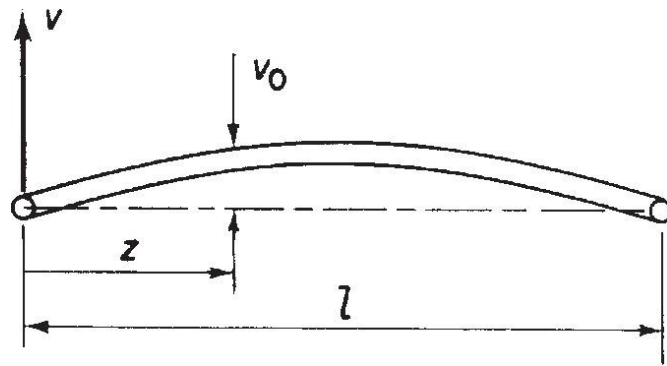


FIGURE P.8.4

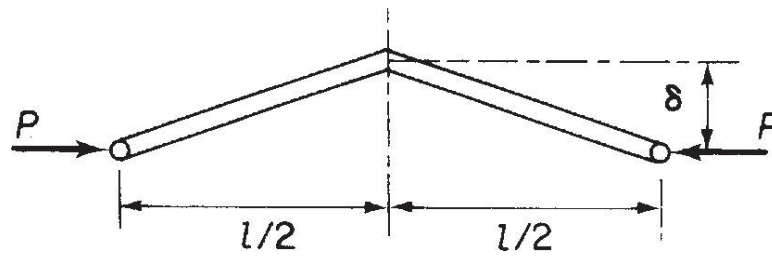


FIGURE P.8.5

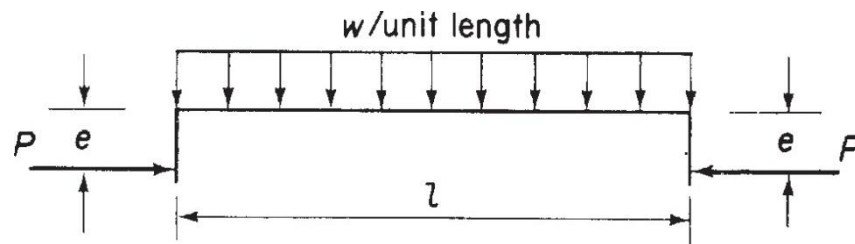


FIGURE P.8.6

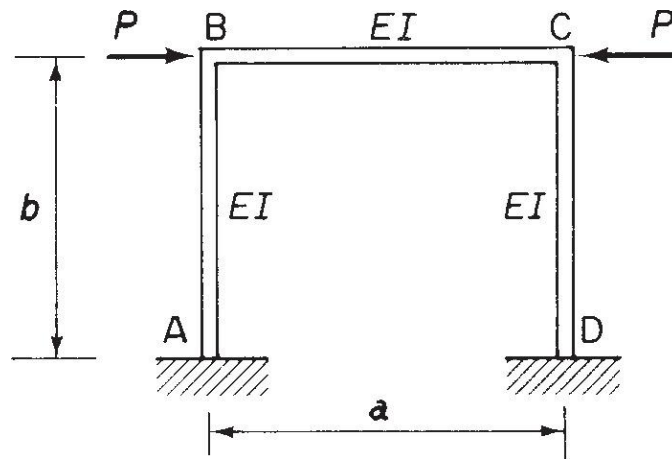


FIGURE P.8.9

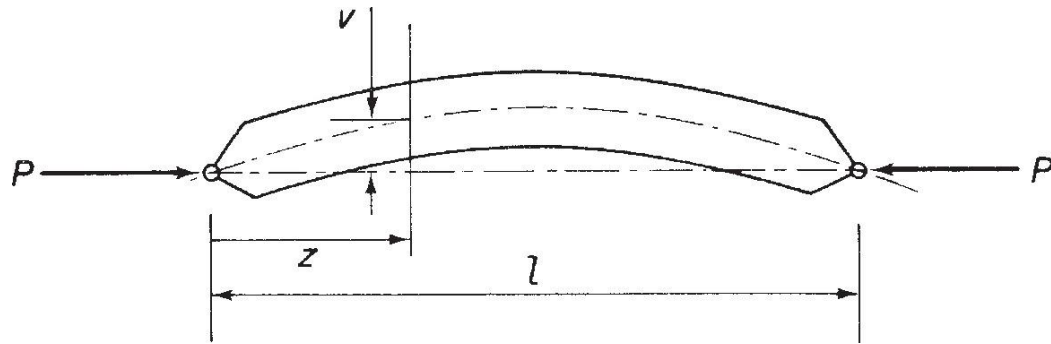


FIGURE P.8.10

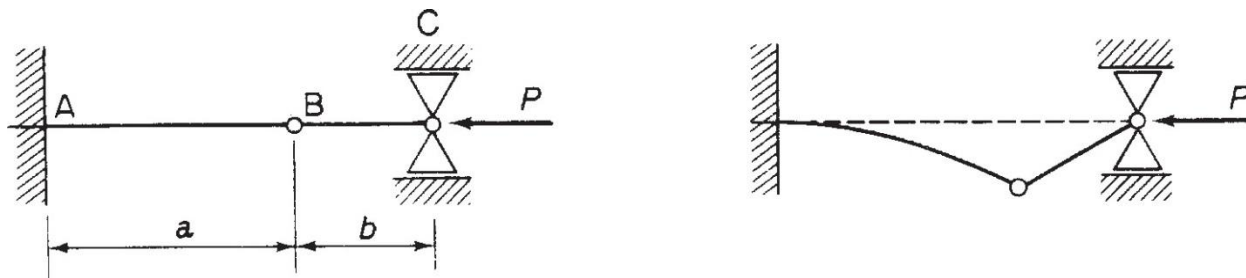


FIGURE P.8.11

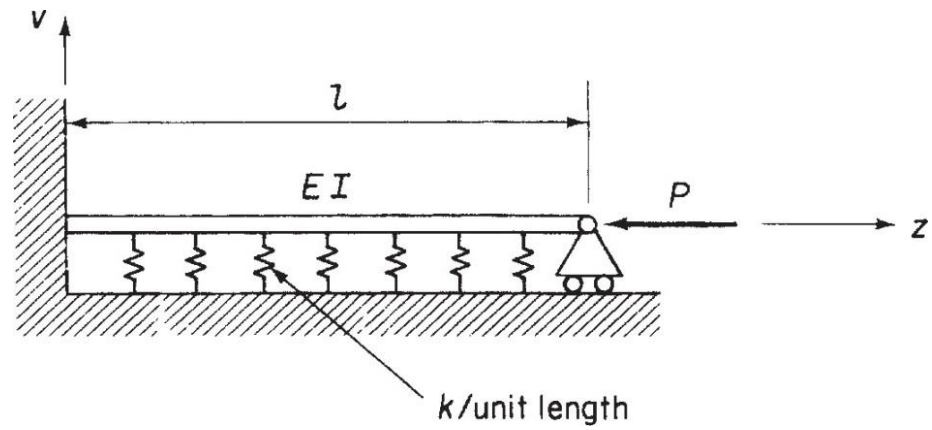


FIGURE P.8.14

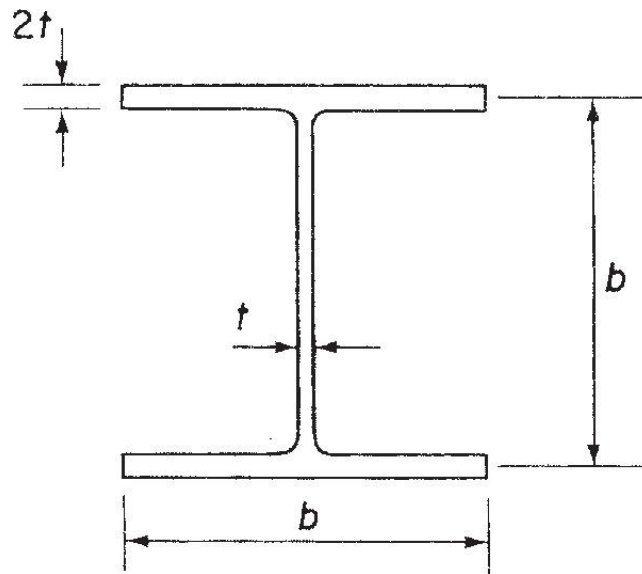


FIGURE P.8.15

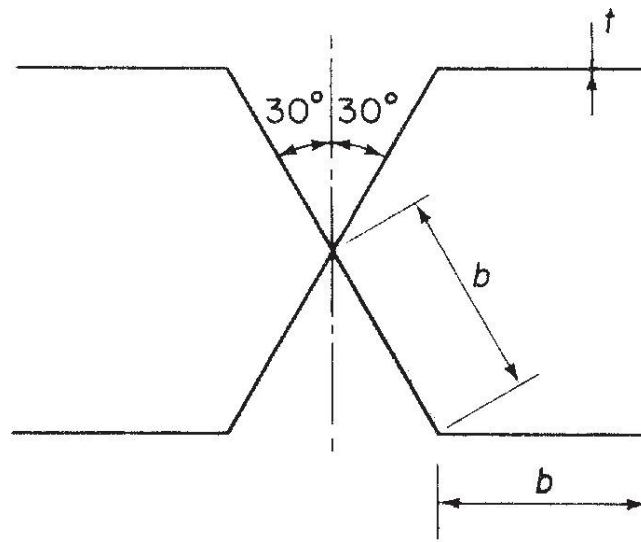


FIGURE P.8.16

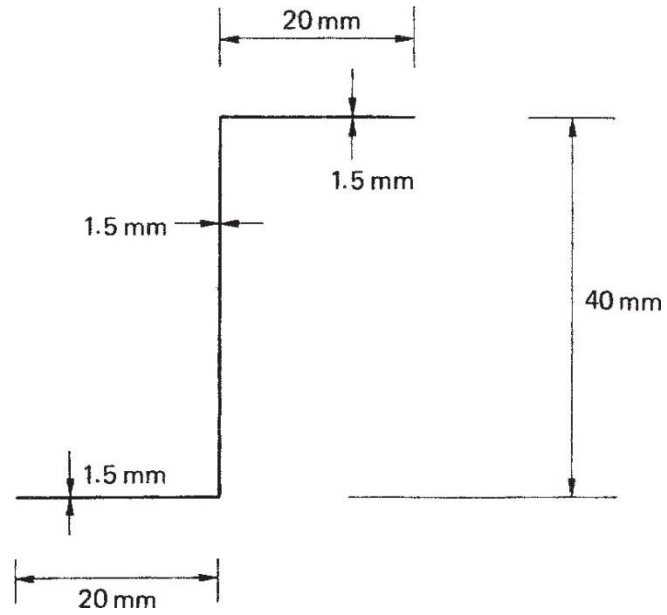


FIGURE P.8.17