**Example 3.1** A W12$\times$65 section made of A36 steel is to be used as an axially loaded compression member. The length of the member ($L$) is 40 ft. Find the axial compression design strength using the formulas for the following cases:

1. The top and bottom of the beam are pinned.
2. There is a bracing at the mid-length in the weak-axis direction.

**Example 3.2** Using A36 steel, select the lightest W14 section available for the service column loads $P_D = 100$ kips and $P_L = 160$ kips. $KL = 10$ ft.

**Example 3.3** Repeat Example 3.2 using column table.