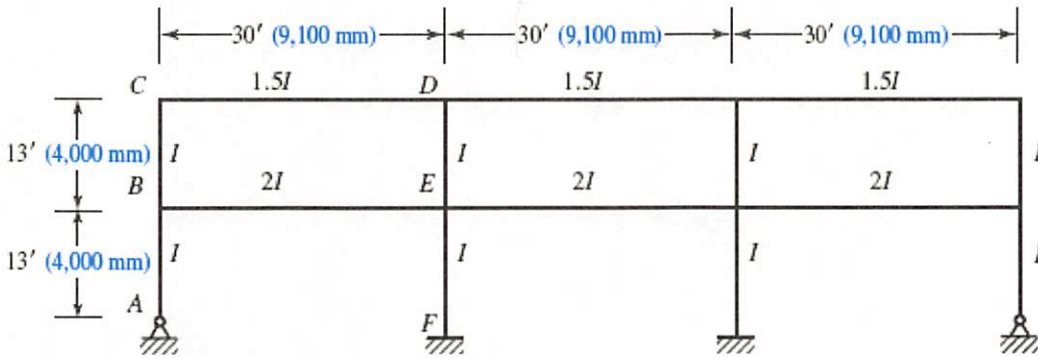


4.7.11 The frame shown in [Figure P4.7-11](#) is unbraced against sidesway. Relative moments of inertia of the members have been assumed for preliminary design purposes. Use the alignment chart and determine K_x for members AB, BC, DE, and EF.



COLUMN AB

JOINT A $G_A = 10$ $G_B = \frac{I/13 + I/13'}{2I/30'} = 2.31$

FROM ALIGNMENT CHART TABLE C-A-7.2 $K_x \approx 2.15$

COLUMN BC

JOINT C $G_C = \frac{I/13'}{1.5I/30'} = 1.5$ FROM CHART $K_x \approx 1.55$

COLUMN DE

JOINT D $G_D = \frac{I/13'}{1.5I/30' + 1.5I/30'} = 0.77$

JOINT E $G_E = \frac{I/13' + I/13'}{2I/30' + 2I/30'} = 1.15$

$K_x = 1.4$

COLUMN EF

JOINT F $G_F = 1$ $K_x \approx 1.3$