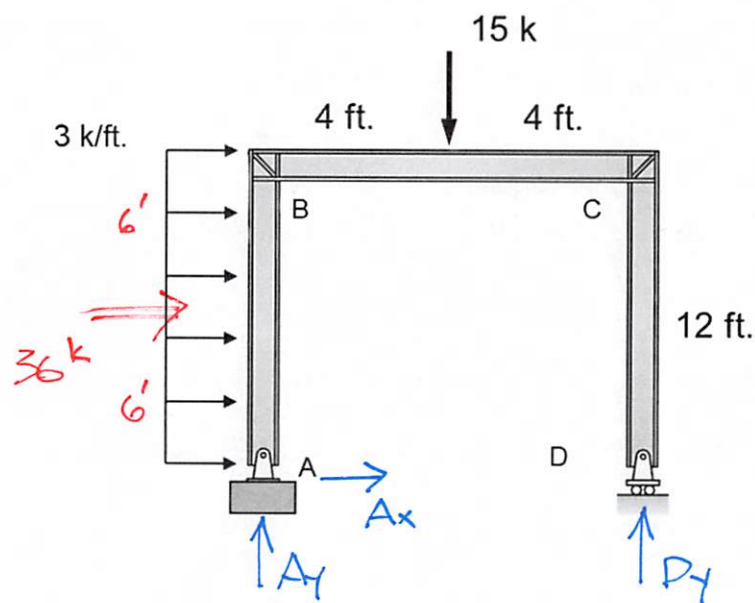


Example 4d-1: Draw the shear and moment diagrams for the following frame:

1/2



$$\sum M_A = 0 = -36^k(6') - 15^k(4') + D_y(8')$$

$$D_y = 34.5^k$$

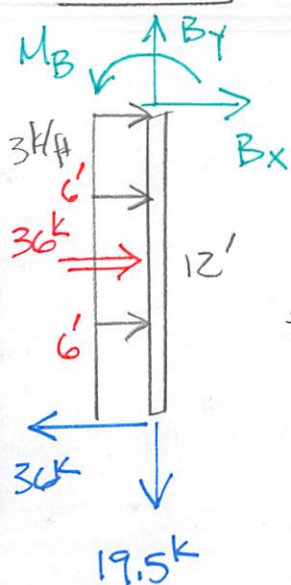
$$\sum F_y = 0 = A_y + D_y - 15^k$$

$$A_y = -19.5^k$$

$$\sum F_x = 0 = A_x + 36^k$$

$$A_x = -36^k$$

FBD AB



$$\sum M_B = 0 = M_B + 36^k(6') - 36^k(12')$$

$$M_B = 216 \text{ kft}$$

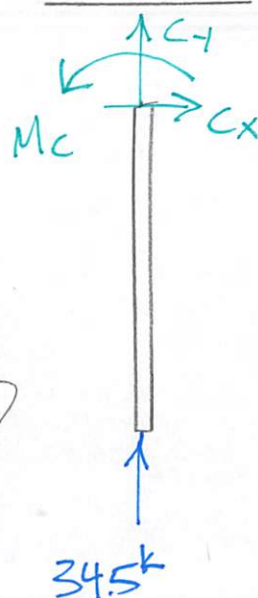
$$\sum F_y = 0 = -19.5^k + B_y$$

$$B_y = 19.5^k$$

$$\sum F_x = 0 = B_x + 36^k - 36^k$$

$$B_x = 0$$

FBD CD



$$\sum M_C = 0 = M_C$$

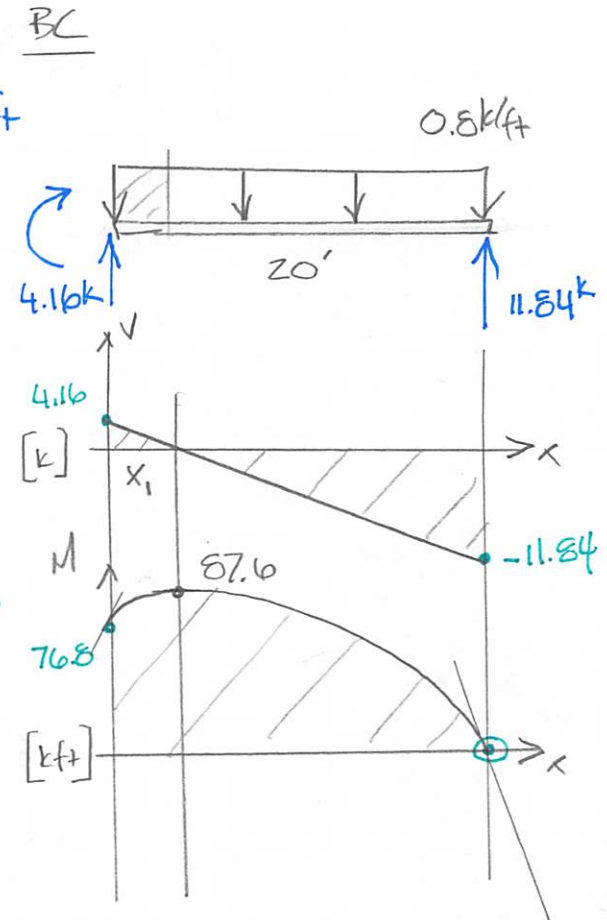
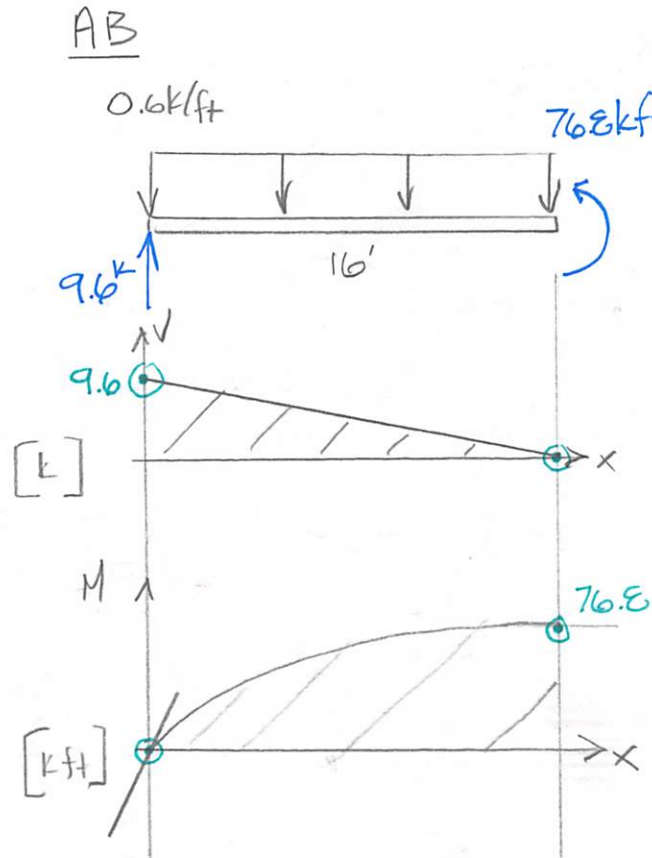
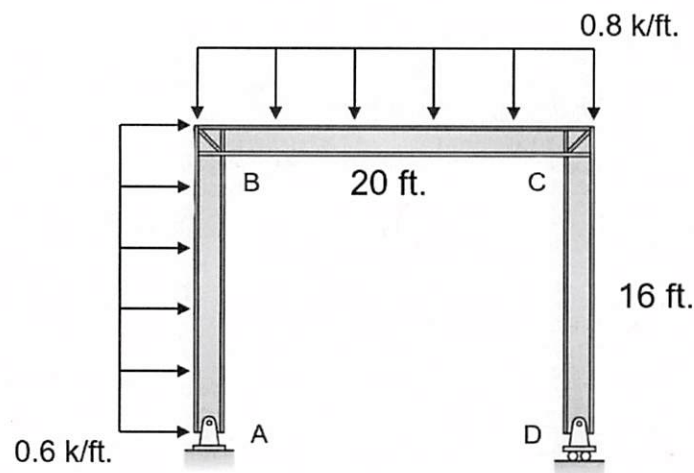
$$\sum F_y = 0 = C_y + 34.5^k$$

$$C_y = -34.5^k$$

$$\sum F_x = 0 = C_x$$

Example 4d-0: Draw the shear and moment diagrams for the following frame:

1/2



MAX. VALUE

$$M_{AB} = 76.8 \text{ k-ft @ B}$$

$$M_{BC} = 87.6 \text{ k-ft @ } x_1 = 5.2'$$

$$M_{CD} = 0$$

$$x_1 = \frac{4.16 \text{ k}}{0.8 \text{ k/ft}} = 5.2 \text{ ft}$$