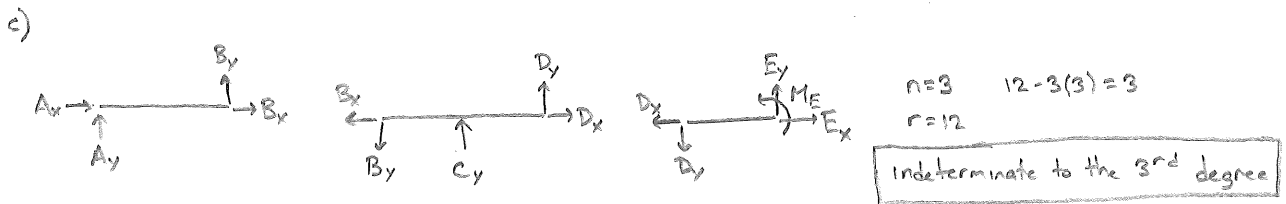
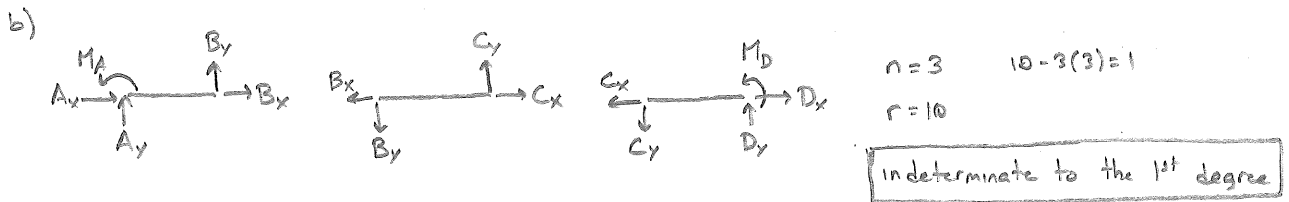
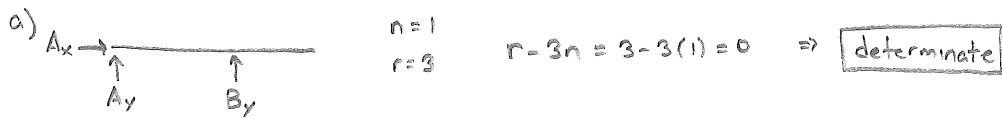


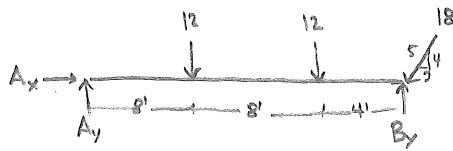
Homework 1: Problem 1



d) unstable no reaction to resist a horizontal force on lower member

Homework 1: Problem 2

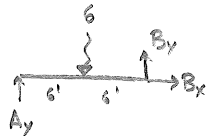
a)



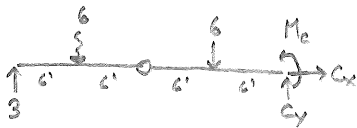
$$\begin{aligned} \sum F_x = 0: & \quad A_x - \left(\frac{3}{5}\right)18 = 0 \\ \sum F_y = 0: & \quad A_y - 12 - 12 - \left(\frac{4}{5}\right)18 + B_y = 0 \\ \sum M_A = 0: & \quad -12(8) - 12(16) - \left(\frac{4}{5}\right)18(20) + B_y(20) = 0 \end{aligned}$$

$$\Rightarrow \begin{cases} A_x = 10.8 \text{ k} \\ A_y = 9.6 \text{ k} \\ B_y = 28.8 \text{ k} \end{cases}$$

b)



$$\begin{aligned} \sum M_B = 0: & \quad -A_y(12) + 6(6) = 0 \\ \Rightarrow & \quad A_y = 3 \text{ k} \end{aligned}$$



$$\begin{aligned} \sum F_x = 0: & \quad C_x = 0 \\ \sum F_y = 0: & \quad 3 - 6 - 6 + C_y = 0 \\ \sum M_C = 0: & \quad -3(24) + 6(18) + 6(6) + M_c = 0 \end{aligned}$$

$$\Rightarrow \begin{cases} A_y = 3 \text{ k} \\ C_x = 0 \\ C_y = 9 \text{ k} \\ M_c = -72 \text{ k}\cdot\text{ft} \end{cases}$$