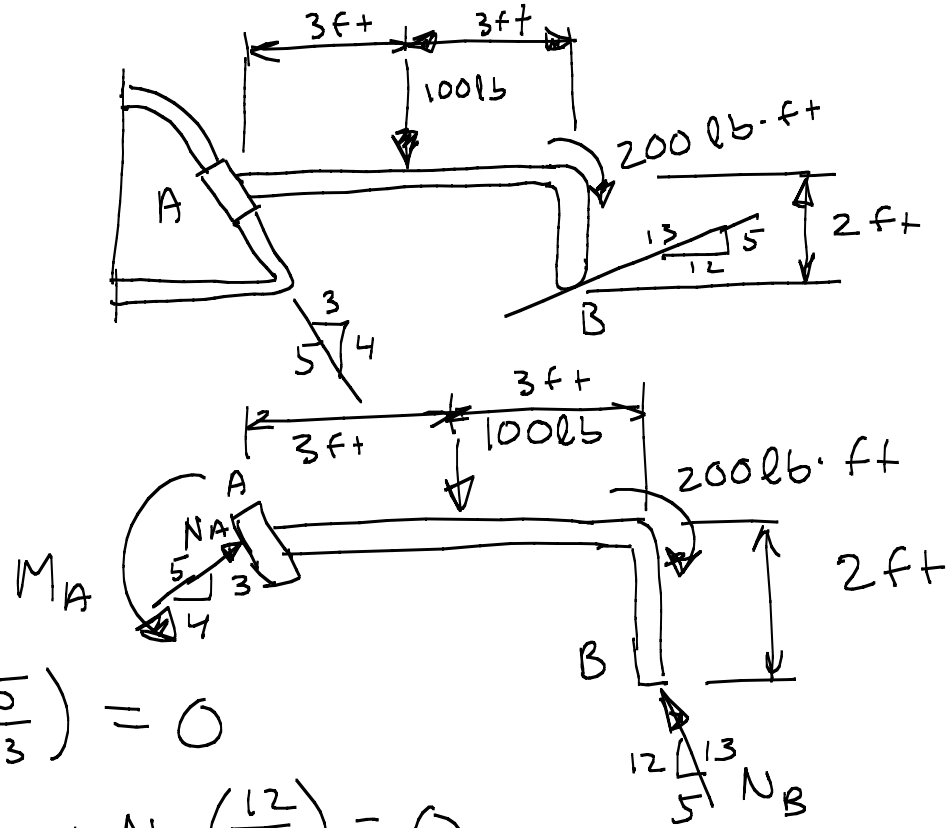
Problem 1

Determine the support reactions



$\pm \Sigma F_x = 0 \Rightarrow N_A\left(\frac{4}{5}\right) - N_B\left(\frac{5}{13}\right) = 0$

$+\uparrow \Sigma F_y = 0 \Rightarrow N_A\left(\frac{3}{5}\right) - 100\,lb + N_B\left(\frac{12}{13}\right) = 0$

$N_A = 39.7\,lb\,,\ N_B = 82.5\,lb$

$+\circlearrowleft \Sigma M_A = 0 \Rightarrow M_A - (100\,lb)(3ft) - 200\,lb\cdot ft - \left(N_B\left(\frac{5}{13}\right)\right)(2ft) + N_B\left(\frac{12}{13}\right)(6ft) = 0$

$M_A = 106\,lb\cdot ft$