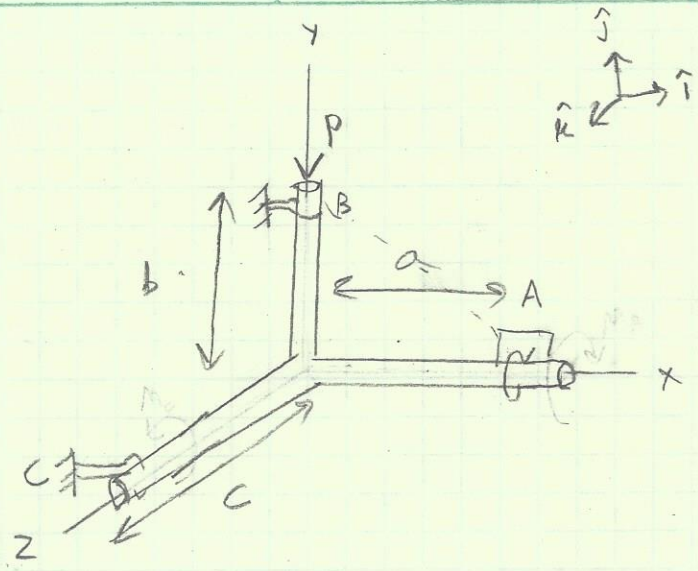
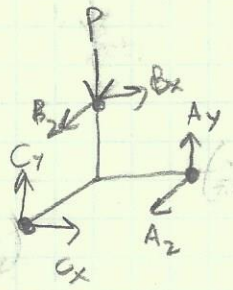
4.74





$P = 1.2$ kN $b = 200$ mm

$a = 300$ mm $c = 250$ mm

$\Sigma F_y = C_y + A_y - 1200 = 0$

$\Sigma F_x = B_x + C_x = 0$

$\Sigma F_z = A_z + B_z = 0$

$\vec{r}_{AB} = \langle 0, b, 0\rangle - \langle a, 0, 0\rangle$

$= \langle -300, 200, 0\rangle$ mm

$\vec{r}_{CB} = \langle 0, b, 0\rangle - \langle 0, 0, c\rangle$

$= \langle 0, 200, -250\rangle$ mm

$\Sigma M_B = \vec{r}_{AB} \times (A_y + A_z) + \vec{r}_{CB} \times (C_y + C_x) = \vec{0}$

$$\begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ -300 & 200 & 0 \\ 0 & A_y & 0 \end{vmatrix} + \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ -300 & 200 & 0 \\ 0 & 0 & A_z \end{vmatrix} + \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 0 & 200 & -250 \\ 0 & C_y & 0 \end{vmatrix} + \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 0 & 200 & -250 \\ C_x & 0 & 0 \end{vmatrix}$$

$\langle 0, 0, -300A_y\rangle + \langle 200A_z, 300A_z, 0\rangle + \langle 250C_y, 0, 0\rangle + \langle 0, 250C_x, -200C_x\rangle$

$\langle 200A_z + 250C_y,\ 300A_z + 250C_x,\ -300A_y - 200C_x\rangle = \langle 0, 0, 0\rangle$

$200A_z + 250C_y = 0$

$300A_z + 250C_x = 0$

$-300A_y - 200C_x = 0$

$250C_y = -200A_z$

$250C_x = -300A_z$

$\frac{C_y}{C_x} = \frac{2}{3}$ $C_y = \frac{2}{3}C_x$ $C_x = \frac{3}{2}C_y$

$-300A_y = 200\left(\frac{3}{2}C_y\right)$

$A_y = -C_y$