

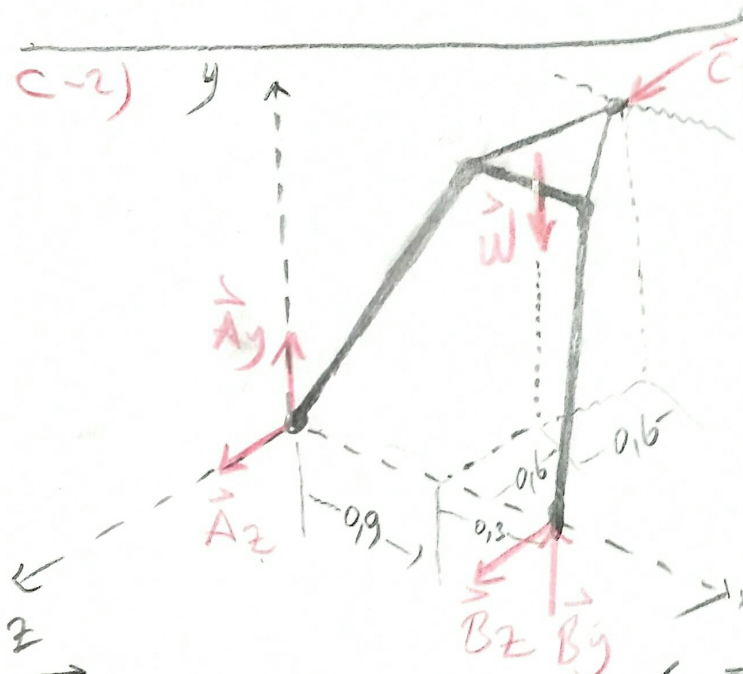
c-1)  $\vec{F}_1 = F_1 \hat{e}_1 = 300 \cdot \left( \frac{17\hat{i} + 15\hat{k}}{22,67} \right) \cong (224,97\hat{i} + 198,5\hat{k}) \text{ N}$

$\vec{F}_2 = F_2 \hat{e}_2 = 150 \cdot \left( \frac{17\hat{i} - 10\hat{j} + 15\hat{k}}{24,78} \right) \cong (102,91\hat{i} - 60,53\hat{j} + 90,8\hat{k}) \text{ N}$

$\vec{F}_3 = F_3 \hat{e}_3 = 80 \cdot \left( \frac{17\hat{i} - 15\hat{k}}{22,67} \right) \cong (60\hat{i} - 52,93\hat{k}) \text{ N}$

$\vec{R} = (387,88\hat{i} - 60,53\hat{j} + 236,37\hat{k}) \text{ N}$

$|\vec{R}| = R \cong 458,24 \text{ N}$



$\vec{W} = [(-20-8) \cdot 9,81]\hat{j} - (-981)\hat{j} \text{ N}$

$\vec{A} = A_y\hat{j} + A_z\hat{k}$

$\vec{B} = B_y\hat{j} + B_z\hat{k}$

$\vec{C} = C_z\hat{k}$

$\uparrow \Sigma F_y = A_y + B_y - 981 = 0 \quad \text{(I)}$

$\rightarrow \Sigma F_z = A_z + B_z + C_z = 0 \quad \text{(II)}$

$\hookrightarrow \Sigma \vec{M}_A = (\vec{r}_{AC} \times \vec{B}) + (\vec{r}_{AC} \times \vec{C}) + (\vec{r}_{AD} \times \vec{W}) = 0 \quad \text{(III)}$

$\vec{r}_{AB} = (1,2\hat{i}) \text{ m}$

$\vec{r}_{AC} = (0,6\hat{i} + 3\hat{j} - 1,2\hat{k}) \text{ m}$

$\vec{r}_{AD} = (0,9\hat{i} - 0,6\hat{k}) \text{ m}$

$\Sigma \vec{M}_A = 0 = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 1,2 & 0 & 0 \\ 0 & B_y & B_z \end{vmatrix} + \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 0,6 & 3 & -1,2 \\ 0 & 0 & C_z \end{vmatrix} + \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 0,9 & 0 & -0,6 \\ 0 & -981 & 0 \end{vmatrix}$

$\hookrightarrow \Sigma M_A = 0 = (-1,2B_z\hat{j} + 1,2B_y\hat{k}) + (3C_z\hat{i} - 0,6C_z\hat{j}) + (-588,6\hat{i} - 882,9\hat{k})$

Statik denge durumunda olduğundan  $\Sigma M_{Ax} = 0 \quad \Sigma M_{Ay} = 0 \quad \Sigma M_{Az} = 0$

$\Sigma M_{Ax} = 0 = 3(C_z - 588,6) \Rightarrow C_z = 186,2 \text{ N}$

$\Sigma M_{Ay} = 0 = -1,2B_z - 0,6C_z \Rightarrow B_z = -98,1 \text{ N}$

$\Sigma M_{Az} = 0 = 1,2B_y - 882,9 \Rightarrow B_y = 735,75 \text{ N}$

Denk. I'den;  $A_y = 245,25 \text{ N}$   
Denk. II'den;  $A_z = -98,1 \text{ N}$