$O(0,0,0)$

$A(0,-3,10)$ ft

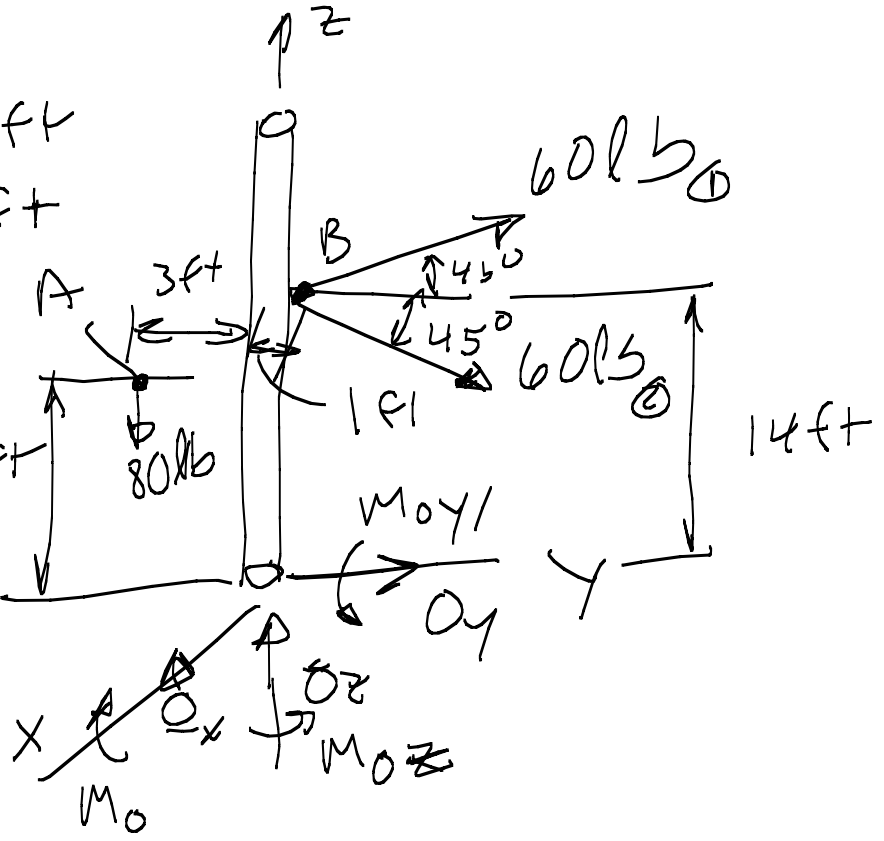
$B(0,1,14)$ ft

$\Sigma \vec{M}_O = 0$

$= M_{Ox}(\hat{i}) + M_{Oy}\hat{j} + M_{Oz}\hat{k}$

$+ \vec{r}_{OA} \times (-80\hat{k})$ ✓

$+ (\vec{r}_{OB} \times 60\text{lb})_1 + (\vec{r}_{OB} \times 60\text{lb})_2$ ✓ ✓



$(\vec{r}_{OA} \times -80\hat{k})$

$$\begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 0 & -3 & 10 \\ 0 & 0 & -80 \end{vmatrix} = [(-3)(-80)]\hat{i} - [0]\hat{j} + [0]\hat{k}$$

$= 240\hat{i}$ lb·ft

$$\vec{F}_1 = -60\,\text{lb}\sin 45^\circ \hat{\imath} + 60\cos 45^\circ \hat{\jmath}$$

$$\vec{F}_2 = 60\,\text{lb}\sin 45^\circ \hat{\imath} + 60\,\text{lb}\cos 45^\circ \hat{\jmath}$$

$$\begin{vmatrix} \hat{\imath} & \hat{\jmath} & \hat{k} \\ 0 & 1 & 14 \\ -60\sin 45^\circ & 60\cos 45^\circ & 0 \end{vmatrix} = \left[0 - (14)(60\cos 45^\circ)\right]\hat{\imath} - \left[0 - (14)(-60\sin 45^\circ)\right]\hat{\jmath} + \left[0 - (1)(-60\sin 45^\circ)\right]\hat{k}$$

$$= -(14)(60)(\cos 45^\circ)\hat{\imath} - (14)(60)(\sin 45^\circ)\hat{\jmath} + 60\sin 45^\circ \hat{k}$$

$$\begin{vmatrix} \hat{\imath} & \hat{\jmath} & \hat{k} \\ 0 & 1 & 14 \\ 60\sin 45 & 60\cos 45 & 0 \end{vmatrix} = -(14)(60)(\cos 45^\circ)\hat{\imath} - \left[0 - (14)(60\sin 45^\circ)\right]\hat{\jmath} + \left[0 - (1)(60\sin 45^\circ)\right]\hat{k}$$

$$= -(14)(60)(\cos 45^\circ)\hat{\imath} + (14)(60)(\sin 45^\circ)\hat{\jmath} - (60)(\sin 45^\circ)\hat{k}$$

$$(\Sigma M_O)_x = 0 \Rightarrow -14(60)(\cos 45^\circ) - (14)(60)(\cos 45^\circ) + 240 + M_{Ox} = 0$$

$$\boxed{M_{Ox} = 948 \text{ lb} \cdot \text{ft}}$$

$$(\Sigma M_O)_y = (14)(60)(\sin 45^\circ) - (14)(60)(\sin 45^\circ) + M_{Oy} = 0$$

$$\boxed{M_{Oy} = 0}$$

$$(\Sigma M_O)_z = -(60)(\sin 45^\circ) + (60)(\sin 45^\circ) + M_{Oz} = 0$$

$$\boxed{M_{Oz} = 0}$$