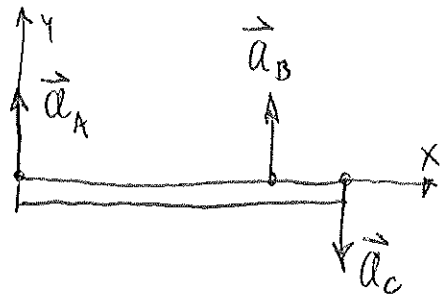
PROB. 15-108



$\vec{a}_C = (-1)\hat{j}\ \frac{ft}{s^2}$

$\alpha\hat{k} = (-0.8)\hat{k}\ \frac{RAD}{s}$

FIND $\vec{a}_A$ AND $\vec{a}_B$ FOR $\omega = 0$

$$\vec{a}_A = \vec{a}_C + \alpha\hat{k} \times \vec{r}_{A/C}$$

$$\alpha\hat{k} \times \vec{r}_{AC} = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 0 & 0 & -0.8 \\ -10 & 0 & 0 \end{vmatrix}$$

$$= -[0 - (-0.8)(-10)]\hat{j} = (8)\hat{j}\ \frac{ft}{s^2}$$

$$\vec{a}_A = (-1)\hat{j} + (8)\hat{j} \boxed{= (7)\hat{j}\ \frac{ft}{s^2}}$$

$$\vec{a}_B = \vec{a}_C + \alpha\hat{k} \times \vec{r}_{B/C}$$

$$\alpha\hat{k} \times \vec{r}_{B/C} = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 0 & 0 & -0.8 \\ -1 & 0 & 0 \end{vmatrix}$$

$$= -[0 - (-0.8)(-1)]\hat{j} = (0.8)\hat{j}\ \frac{ft}{s^2}$$

$$\vec{a}_B = (-1)\hat{j} + (0.8)\hat{j} \boxed{= (-0.2)\hat{j}\ \frac{ft}{s^2}}$$