

PROB. 15-130

~~$\vec{a}_E = \vec{a}_D + \omega_{BD} \hat{k} \times \vec{r}_{E/D} - \omega_{BD}^2 \vec{r}_{E/D}$~~

$$\vec{a}_E = \vec{a}_D + \omega_{BD} \hat{k} \times \vec{r}_{E/D} - \omega_{BD}^2 \vec{r}_{E/D}$$

$$\omega_{BD} \hat{k} \times \vec{r}_{E/D} = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 0 & 0 & 7.2 \\ 0.225 & 0.09 & 0 \end{vmatrix}$$

$$= [0 - (7.2)(0.09)] \hat{i} - [0 - (7.2)(0.225)] \hat{j}$$

$$= (-0.648) \hat{i} + (1.62) \hat{j} \frac{m}{s^2}$$

$$\vec{a}_E = (-0.648) \hat{i} + (-1.62) \hat{j} + (-0.648) \hat{i} + (1.62) \hat{j}$$

$$\vec{a}_E = (-1.296) \hat{i} \frac{m}{s^2}$$