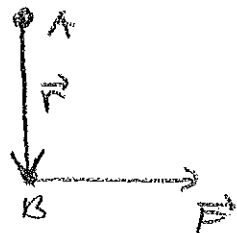
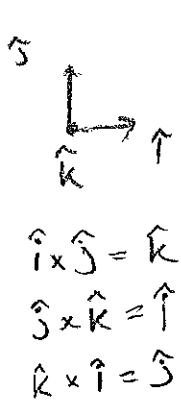
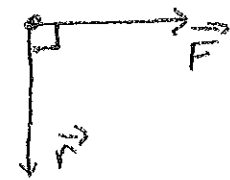


Simple examples of computing moments using a cross product

Aug 28, 2014
BME 3400



\Rightarrow



$$\vec{M}_A = \vec{r} \times \vec{F}$$

$$|\vec{M}_A| = \|\vec{r}\| \|\vec{F}\| \sin(\theta)$$

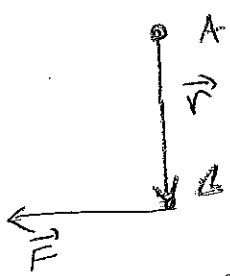
$$= \|\vec{r}\| \|\vec{F}\| \sin(90)$$

$$|\vec{M}_A| = \|\vec{r}\| \|\vec{F}\|$$

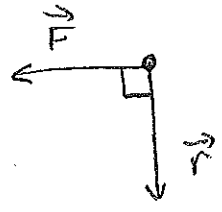
\vec{M}_A points out of the page
orthogonal to plane of
 $\vec{r} + \vec{F}$
and corresponds with a
positive moment



$$\vec{M}_A = \|\vec{r}\| \|\vec{F}\| \hat{k}$$



\Rightarrow



$$\vec{M}_A = \|\vec{r}\| \|\vec{F}\| (-\hat{k})$$



\Rightarrow



$$\sin(0) = 0 \Rightarrow \vec{M}_A = 0$$