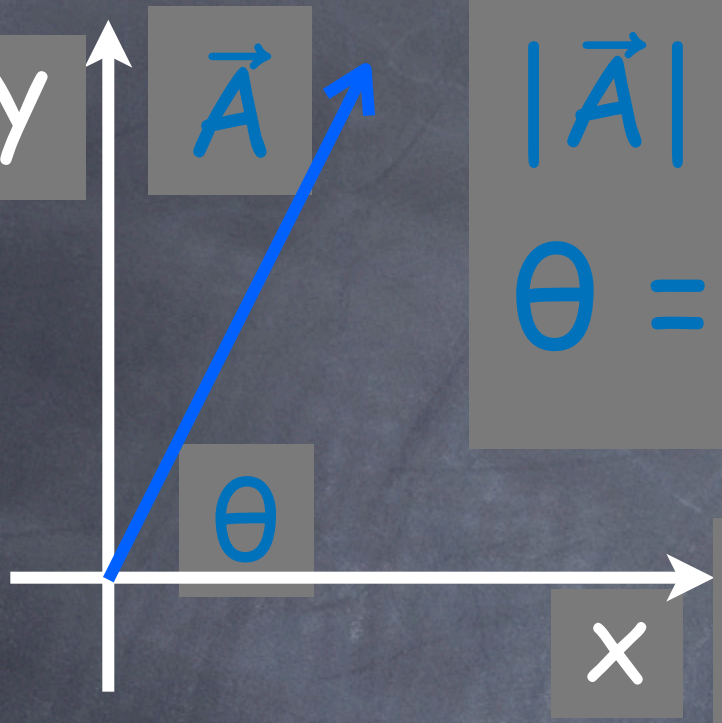

$|\vec{A}| = 2\,\text{m}$

$\theta = \frac{\pi}{3}$

A. $A_x = |\vec{A}| \sin\theta = \sqrt{3}\,\text{m}$

B. $A_x = |\vec{A}| \sin\theta = 1\,\text{m}$

C. $A_x = |\vec{A}| \cos\theta = \sqrt{3}\,\text{m}$

D. $A_x = |\vec{A}| \cos\theta = 1\,\text{m}$

E. Not enough information.

Let $\vec{A} = 2\hat{\imath} - 3\hat{\jmath}$ and $\vec{B} = -\hat{\jmath} + \hat{k}$

$\vec{A} \cdot \vec{B} =$

A. $2\hat{\imath} - 4\hat{\jmath} + \hat{k}$

B. 6

C. -3

D. 3

E. 2

Let $\vec{A} = 2\hat{i} - 3\hat{j}$ and $\vec{B} = -\hat{j} + \hat{k}$

$\vec{A} \times \vec{B} =$

A. $2\hat{i} - 4\hat{j} + \hat{k}$

B. $-3\hat{i} + 2\hat{j} - 2\hat{k}$

C. 3

D. $3\hat{i} + 2\hat{j} - 2\hat{k}$

E. $-3\hat{i} - 2\hat{j} - 2\hat{k}$

	$\hat{i}$	$\hat{j}$	$\hat{k}$
$\hat{i}\times$	0	$\hat{k}$	$-\hat{j}$
$\hat{j}\times$	$-\hat{k}$	0	$\hat{i}$
$\hat{k}\times$	$\hat{j}$	$-\hat{i}$	0

Displacement and Position vectors

many physics quantities are vectors

- velocity $\vec{v}$
- force $\vec{F}$
- momentum $\vec{p}$
- gravitational field $\vec{g}$
- electric field $\vec{E}$
- magnetic field $\vec{B}$
- angular momentum $\vec{L}$

$\Rightarrow$ more complicated ... Moment of Inertia