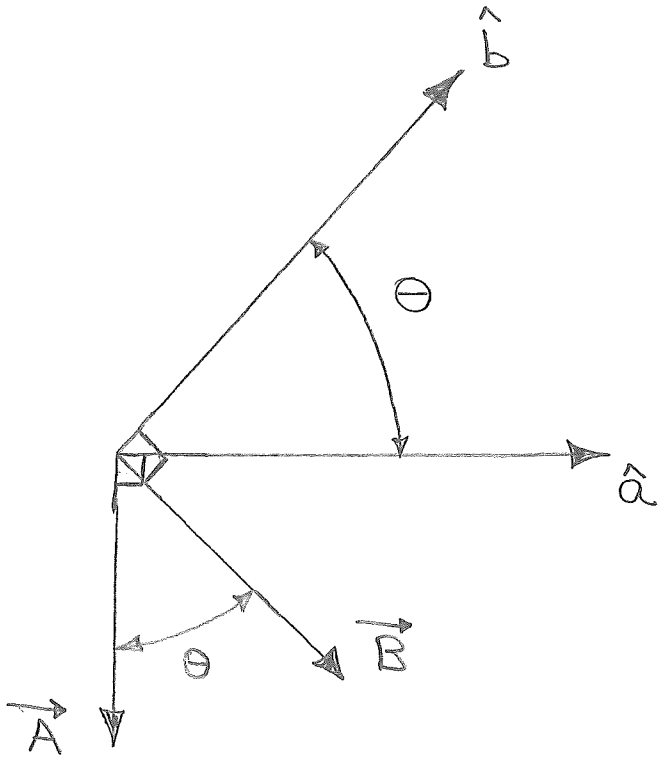

(a) $|\hat{a}\times\hat{b}| = |\hat{a}||\hat{b}|\sin\theta = \sin\theta$

(1 " 1 " sin θ)

$\hat{a}\times\hat{b}$ is $\perp$ to the page and points out of the page.

(b) $|\vec{A}| = |\hat{a}||\hat{a}\times\hat{b}|\sin\frac{\pi}{2} = \sin\theta$

(1 " 1 " sin θ)

(c) $|\vec{B}| = |\hat{b}||\hat{a}\times\hat{b}|\sin\frac{\pi}{2} = \sin\theta$

(d) $|\vec{C}| = |\vec{A}||\vec{B}|\sin\theta = \sin^3\theta$

(sin θ " sin θ)

$\vec{C} \cdot \vec{A}\times\vec{B}$ is $\perp$ to the page and points out of the page.

So $\vec{A}\times\vec{B} = \sin^2\theta\ \hat{a}\times\hat{b}$