

Physics 101Rec
Quiz#2
Chapter 3e

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Name: _____ Id: _____ Sect: _____

Consider the following two vectors: $\vec{A} = 2\hat{i} - 3\hat{j} + 1\hat{k}$ and $\vec{B} = -3\hat{i} + 5\hat{j} - 2\hat{k}$. Find the magnitude of $\vec{A} \times \vec{B}$.

$$\begin{aligned}\vec{A} \times \vec{B} &= \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 2 & -3 & 1 \\ -3 & +5 & -2 \end{vmatrix} \\ &= (6 - 5)\hat{i} - (-4 + 3)\hat{j} + (10 - 9)\hat{k} \\ &= \hat{i} + \hat{j} + \hat{k} \\ |\vec{A} \times \vec{B}| &= \sqrt{1^2 + 1^2 + 1^2} = \sqrt{3}\end{aligned}$$