

Classroom Voting Questions: Multivariable Calculus

13.4 The Cross Product

- The cross product of $2\hat{i}$ and $3\hat{j}$ is
 - $6\hat{k}$
 - $-6\hat{k}$
 - 0
 - $6\hat{i}\hat{j}$
- For the vectors $\vec{a} = 4\hat{i} - \hat{j} + 2\hat{k}$ and $\vec{b} = -\hat{i} + 5\hat{j} + 3\hat{k}$, the cross product $\vec{a} \times \vec{b}$ is
 - $-13\hat{i} + 14\hat{j} + 19\hat{k}$
 - $13\hat{i} + 14\hat{j} - 19\hat{k}$
 - $-13\hat{i} - 14\hat{j} + 19\hat{k}$
 - $13\hat{i} - 14\hat{j} - 19\hat{k}$
- A vector that is normal to the plane containing the vectors $\vec{a} = 4\hat{i} - \hat{j} + 2\hat{k}$ and $\vec{b} = -\hat{i} + 5\hat{j} + 3\hat{k}$ is
 - $-13\hat{i} + 14\hat{j} + 19\hat{k}$
 - $13\hat{i} + 14\hat{j} - 19\hat{k}$
 - $-13\hat{i} - 14\hat{j} + 19\hat{k}$
 - $13\hat{i} - 14\hat{j} - 19\hat{k}$
- If $\vec{d} = \vec{a} \times \vec{b}$, then $\vec{a} \cdot \vec{d} =$
 - $\vec{a} \times (\vec{b} \cdot \vec{b})$
 - 0
 - $\vec{a} \times \vec{a} \cdot \vec{b}$
 - $(\vec{a} \cdot \vec{b}) \times \vec{b}$

5. For any vectors \vec{u} and \vec{v} , $\vec{u} \times \vec{v} = \vec{v} \times \vec{u}$
- (a) True, and I am very confident
 - (b) True, but I am not very confident
 - (c) False, but I am not very confident
 - (d) False, and I am very confident
6. For any vectors \vec{u} and \vec{v} , $(\vec{u} \times \vec{v}) \times (\vec{v} \times \vec{u}) = (\vec{v} \times \vec{u}) \times (\vec{u} \times \vec{v})$
- (a) True, and I am very confident
 - (b) True, but I am not very confident
 - (c) False, but I am not very confident
 - (d) False, and I am very confident