

CHAPTER 10

1. Show that vectors $\mathbf{A}$ and $\mathbf{B}$ are orthogonal if $\mathbf{A} \cdot \mathbf{B} = 0$.
 (a) Show that $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

Answer: $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

- (b) Show that $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

Answer: $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

2. (a) Show that $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.
 (b) Show that $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

Answer: $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

- (c) Show that $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

$\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

Answer: $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

3. Consider the vectors $\mathbf{A}$, $\mathbf{B}$, $\mathbf{C}$, $\mathbf{D}$, $\mathbf{E}$, $\mathbf{F}$, $\mathbf{G}$, $\mathbf{H}$, $\mathbf{I}$, $\mathbf{J}$, $\mathbf{K}$, $\mathbf{L}$, $\mathbf{M}$, $\mathbf{N}$, $\mathbf{O}$, $\mathbf{P}$, $\mathbf{Q}$, $\mathbf{R}$, $\mathbf{S}$, $\mathbf{T}$, $\mathbf{U}$, $\mathbf{V}$, $\mathbf{W}$, $\mathbf{X}$, $\mathbf{Y}$, $\mathbf{Z}$.

- (a) Show that $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

Answer: $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

- (b) Show that $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

Answer: $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

4. Show that $\mathbf{A} \cdot \mathbf{B} = 0$ if and only if $\mathbf{A} \cdot \mathbf{B} = 0$.

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