

Ch12-3

單選題

■ Which of the following vectors is not orthogonal to the vector $3i + 4j + 5k$?
A) 0; B) $3i + 4j - 5k$; C) $15i - 9k$; D) $6i - 8j + 10k$.
Ans : D

SOL :

The zero vector is considered to be perpendicular to all vectors.

And two vectors **a** and **b** are orthogonal if and only if $\mathbf{a} \cdot \mathbf{b} = 0$

$$(3i + 4j + 5k) \cdot (3i + 4j - 5k) = 9 + 16 - 25 = 0$$

$$(3i + 4j + 5k) \cdot (15i - 9k) = 45 - 45 = 0$$

$$(3i + 4j + 5k) \cdot (6i - 8j + 10k) = 18 - 32 + 50 = 36 \neq 0$$