

Akure Daniel Ousegun

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Fleet / Elect Engineering

Serial NO: 12

MAT/02

$$A = (6u^2 + 8)i + (4u - 10)j + 8u^3k$$

$$B = 3ui + (2u - 5)j + 5k$$

① Find $d(A \cdot B)/du$

$$(A \cdot B) = 3(6u^2 + 8) + (2u - 5)(4u - 10) + 8u^3(5)$$

$$(A \cdot B) = 18u^3 + 24u + 8u^2 - 20u - 20u + 50 + 40u^3$$

$$(A \cdot B) = 58u^3 + 8u^2 - 16u + 50$$

$$\therefore d(A \cdot B)/du = 174u^2 + 16u - 16$$

② $A = (6u^2 + 8)i + (4u - 10)j + 8u^3k$

$$dA/du = 12ui + 4j + 24u^2k$$