

Name: Ohwuchi Avitus Chukwuebuliga

Department: Chemical Engineering

Matric No: 19/EN601010

MAT 102

If $A = (6u^2 + 8)j + (4u - 10)k + 8u^3i$ and $B = 3ui + (2u - 5)j + 5k$
Find $\frac{d}{du}(A \cdot B)$ (i) $\frac{dA}{du}$ (ii) $\frac{d(A \cdot B)}{du}$

SOL

$$(ii) \frac{dA}{du} = 12ui + 4j + 24u^2k$$

$$(i) A \cdot B = 18u^3 + 24u + 6u^2 - 40u + 50 + 40u^3 \\ = 58u^3 + 8u^2 - 16u + 50$$

$$\frac{d(A \cdot B)}{du} = 174u^2 + 16u - 16$$