

Da-Silva Amshuwapo

100 LEVEL

MAT 102

19/ENG 06/017

(1) If $A = (6u^2 + 8)i + (4u - 10)j + 8u^3k$
and $B = 3ui + (2u - 5)j + 5k$

Find

i) ~~$\frac{d}{du}$~~ $\frac{d}{du}(A \cdot B)$

ii) $\frac{dA}{du}$

Answers

(1) $A = (6u^2 + 8)i + (4u - 10)j + 8u^3k$ and $B =$
 $B = (3u)i + (2u - 5)j + 5k$

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

$$= 18u^3 + 24u + 8u^2 - 20u + 50 + 40u^3$$

$$= 58u^3 + 8u^2 - 16u + 50$$

$$\frac{d}{du}(A \cdot B) = 174u^2 + 16u - 10$$

$\frac{d}{du}$

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