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MAT. 102 Assignment

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

D) Find dA/du ($A \cdot B$)

ii) $\frac{d}{du} A \cdot B$

D) $A \cdot B = 3u(6u^2 + 8) + (4u - 10)(2u - 5) + 8u^3(-5)$
 $= 18u^3 + 24u + 8u^2 - 20u - 20u + 50 + 40u^3$
 $= 58u^3 + 8u^2 - 16u + 50$

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

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