

OMYESOH MAXWELL OSONDU

MAT 102

19/ENG041046

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

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

a) Find $\frac{d}{du}(A-B)$

b) Find $\frac{dA}{du}$

Solution.

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

$$= (18u^3 + 24u)i + (8u^2 - 40u + 50)j + (40u^3)k$$

$$= \frac{d}{du}(18u^3 + 24u)i + \frac{d}{du}(8u^2 - 40u + 50)j + \frac{d}{du}(40u^3)k$$

$$= (54u^2 + 24)i + (16u - 40)j + (120u^2)k$$

$$b) \frac{dA}{du} = \frac{d}{du}(6u^2+8)i + \frac{d}{du}(4u-10)j + \frac{d}{du}(8u^3)k$$

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