

OMYESOM MAXWELL OSOMDU

19/ENG04/046

MAT 102.

a) $A \cdot C + B \cdot C$

$$A \cdot C = (3i + 4j - 6k)(7i - 7j + k)$$

$$= (21i - 28j - 6k)$$

$$B \cdot C = (5i - 11j + 2k)(7i - 7j + k)$$

$$= (35i + 77j + 2k)$$

∴

$$(21i - 28j - 6k) + (35i + 77j + 2k)$$

$$= 56i + 49j - 4k //$$

b) $(A - B) \cdot C$

$$(3i + 4j - 6k) - (5i - 11j + 2k)$$

$$3i + 4j - 6k - 5i + 11j - 2k$$

$$-2i + 15j - 8k$$

∴

$$(-2i + 15j - 8k)(7i - 7j + k)$$

$$= -14i - 105j - 8k //$$

c) $A \cdot (B \times C)$

$$B \times C = \begin{matrix} i & j & k \\ 5 & -11 & 2 \\ 7 & -7 & 1 \end{matrix}$$

$$= |-11 - (-14)i - 15 - 14j + | -35 - (-77) | k$$

$$= 3i + 9j + 42k$$

∴

$$(3i + 4j - 6k)(3i + 9j + 42k)$$

$$= 9i + 36j - 252k //$$