

Umeadota Makuochukwu ANTHONY  
Computer Engineering  
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$$A = 3i + 4j - 6k$$

$$B = 5i - 11j + 2k$$

$$C = 7i - 7j + k$$

1.)  $A \cdot C + B \cdot C$

$$A \cdot C = (3i + 4j - 6k) \cdot (7i - 7j + k) \\ = 21i - 28j - 6k$$

$$B \cdot C = (5i - 11j + 2k) \cdot (7i - 7j + k) \\ = 35i + 77j + 2k$$

$$A \cdot C + B \cdot C$$

$$21i - 28j - 6k + 35i + 77j + 2k \\ = 56i + 49j - 4k$$

2.)  $(A - B) \cdot C$

$$(A - B) = (3i + 4j - 6k) - (5i - 11j + 2k) \\ = (3i + 4j - 6k) - 5i + 11j - 2k \\ = -2i + 15j - 8k$$

$$(A - B) \cdot C = (-2i + 15j - 8k) \cdot (7i - 7j + k) \\ = -14i - 105j - 8k$$

3.) A. (BxC)

|BxC|

$$\begin{array}{ccc|c} & + & - & + \\ & i & j & k \\ \hline & 5 & -11 & 2 \\ \hline & 7 & -7 & 1 \end{array}$$

$$i \begin{vmatrix} -11 & 2 \\ -7 & 1 \end{vmatrix} - j \begin{vmatrix} 5 & 2 \\ 7 & 1 \end{vmatrix} + k \begin{vmatrix} 5 & -11 \\ 7 & -7 \end{vmatrix}$$

$$i[-11+14] - j[5-14] + k[-77+35]$$
$$3i + 9j - 42k$$

A. (BxC)

$$(3i + 4j - 6k) \quad \text{---} \quad (2i + 9j - 42k)$$
$$9i + 36j + 252k$$