(Chukwuemeka Excellence
(Chemical Engineering
19/ENG01/005

1. $A - 2B = 4i + j - 2k - 6i + 4j + 2k$

$= -2i + 5j - 4k \times C$

$A - 2B \times C = 5.(-2) - (-4).6)i - j(-2.-2) - (-4).1) + (-2.0)$

$A - 2B \times C = -10i - 8j - 5k.$

$2C \times 3B = i(0.3 - (-4)(-6)) - j(2.3 - (-4.9)) + k(2.(-6) - 0.9)$

$2C \times 3B = -24i - 42j - 12k$

$A \times (2C \times 3B) = -96i + 96j - 144k.$

2. $A = Pi + -6j - 3k$

$B = 4i + 3j - k$

$C = i - 3j + 2k$

for coplanar vectors $a.[b \times c] = 0$

$$\begin{vmatrix} 6 & -3 \\ 3 & -1 \end{vmatrix} 1 - \begin{vmatrix} P & -3 \\ 4 & -1 \end{vmatrix} -3 + \begin{vmatrix} P & -6 \\ 4 & 3 \end{vmatrix} 2$$

$(6 - (-9) \times 1) - (-3 \times (-P + 12) + 2(3P + 24)$

$15 - 3P + 36 + 6P + 48 = 0$

$3P = -48 - 15 - 12$

$3P = 99$

$P = 33$