DAVID DESIRE EKONG

19/ENG06/018

MECHANICAL ENGINEERING

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1. -3A +7B-8C = -3(2i-j) +7(3i +j -11k) -8(4i +4j -5k)=

 6i+3j + 21i+7j-77k -32j -40k=

 -17i -22j -37k

 2) IF K = 2A +4B -C

 a=2,b=4,c=1

 /a/=√a^2x + a^2y +a^2z

 /a/= √2^+4^2-1 = √4+16-1=4.3

 Cosα = Ax/a =2/4.3=0.4

 Cosβ = Ay/a =4/4.3 =1

 cos∞= Az/a =1/4.3=0.2

 3 A\*B\*C = 2i – j + 3i +j -11k + 4i +4j -5k

 2i\*3i \* -j\*+j \*4j \*-11k\* -5k

 = 24i -4j +55k

 4) (3A \* B).(A\*2B)

 3A\*B = 3(2i – j) \* 3i +j -11k = 18i -3j-11k

 A\*2B = 2i -j \* 2(3i +j -11k) = 12i -2j -22k

5) A -2B-C =

 a= 2i -j

 b= 6i + 2j -22k

 c = 4i + 4j -5k

 2i – j -6i +2j -22k – 4i + 4j – 5k

 -8i +5j – 27k