DAVID DESIRE EKONG

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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