Question

Given three vectors a=-i-4j+2k, b=3i+2j-2k, c=2i-3j+k ,calculate a *(b x c)

a.-6

b.6

c.9

d.-9

Solution

a = (-1; -4; 2); b = (3; 2; -2); c = (2; -3; 1); (a*[b x c]) - ?

Firstly we find [b x c]

$$[b\ x\ c] = \begin{pmatrix} i & j & k \\ 3 & 2 & -2 \\ 2 & -3 & 1 \end{pmatrix}$$
$$= i(2 * 1 — (-3) * (-2)) + j(2 * (-2) - 3 * 1) + k(3 * (-3) - 2 * 2)$$

[b x c] = -4i -5j -5k;

(a*[b x c]) = -1*(-4) + (-4)*(-5) + 2*(-5) = **14**

Answer: **(a*[b x c]) = 14.** We don't have correct answer in given multiple choice answers.