

QUESTION

If $\mathbf{c} = \mathbf{i} - 2\mathbf{j}$, $\mathbf{d} = -\mathbf{i} + \mathbf{j} + 3\mathbf{k}$ and $\mathbf{e} = \mathbf{i} - 2\mathbf{j} + \mathbf{k}$, evaluate $\mathbf{c} \cdot (\mathbf{d} \times \mathbf{e})$

ANSWER

$$\mathbf{c} \cdot (\mathbf{d} \times \mathbf{e}) = (1, -2, 0) \cdot (1+6, 3+1, 2-1) = (1, -2, 0) \cdot (7, 4, 1) = 7 - 8 + 0 = -1$$