

QUESTION

If $\mathbf{a} = 2\mathbf{i} - 3\mathbf{j} + \mathbf{k}$ and $\mathbf{b} = \mathbf{i} - \mathbf{j}$ evaluate $\mathbf{a} \cdot \mathbf{b}$.

ANSWER

$$\mathbf{a} \cdot \mathbf{b} = (2, -3, 1) \cdot (1, -1, 0) = 2(1) + (-3)(-1) + 1(0) = 2 + 3 + 0 = 5$$