

Edexcel (U.K.) Pre 2017

Questions By Topic

FP3 Chap05 Vectors

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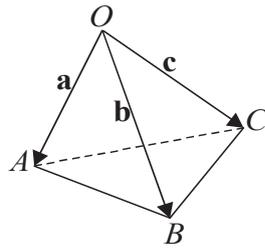


Figure 1

The points A , B and C have position vectors \mathbf{a} , \mathbf{b} and \mathbf{c} respectively, relative to a fixed origin O , as shown in Figure 1.

It is given that

$$\mathbf{a} = \mathbf{i} + \mathbf{j}, \quad \mathbf{b} = 3\mathbf{i} - \mathbf{j} + \mathbf{k} \quad \text{and} \quad \mathbf{c} = 2\mathbf{i} + \mathbf{j} - \mathbf{k}.$$

Calculate

(a) $\mathbf{b} \times \mathbf{c}$, (3)

(b) $\mathbf{a} \cdot (\mathbf{b} \times \mathbf{c})$, (2)

(c) the area of triangle OBC , (2)

(d) the volume of the tetrahedron $OABC$. (1)
