

6

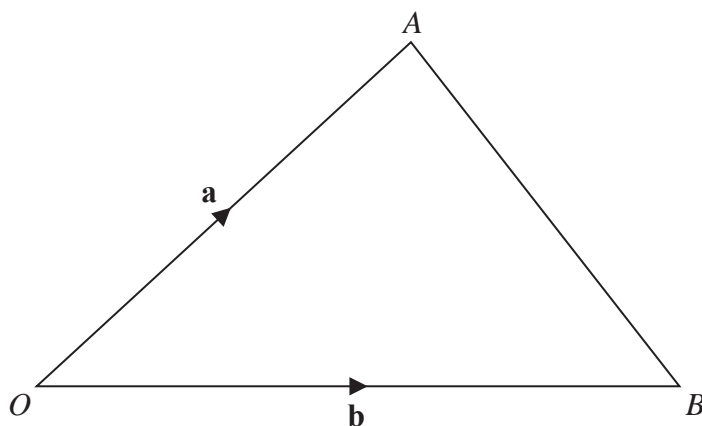
Diagram NOT
accurately drawn

Figure 3

Figure 3 shows the triangle OAB with $\vec{OA} = \mathbf{a}$ and $\vec{OB} = \mathbf{b}$.

- (a) Find \vec{AB} in terms of \mathbf{a} and \mathbf{b} .

(1)

The point P is such that $\vec{OP} = \frac{3}{4}\vec{OA}$, and the point Q is the midpoint of AB .

- (b) Find \vec{PQ} as a simplified expression in terms of \mathbf{a} and \mathbf{b} .

(2)

The point R is such that PQR and OBR are straight lines where

$$\vec{QR} = \mu\vec{PQ} \quad \text{and} \quad \vec{BR} = \lambda\vec{OB}$$

- (c) Express \vec{QR} in terms of

(i) \mathbf{a} , \mathbf{b} and μ

(ii) \mathbf{a} , \mathbf{b} and λ

(3)

- (d) Hence find the value of

(i) μ

(ii) λ

(4)

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Question 6 continued

Handwriting practice area with horizontal dotted lines.



P 5 3 2 9 2 A 0 1 3 3 6

Question 6 continued

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Question 6 continued

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(Total for Question 6 is 10 marks)

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