

9

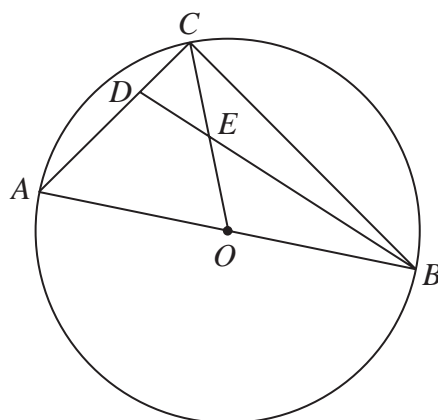


Diagram **NOT**
accurately drawn

Figure 3

Figure 3 shows three points A , B and C on a circle with centre O where AOB is a diameter of the circle.

D is the point on AC such that $AD:DC = 3:2$

Given that $\vec{OA} = \mathbf{a}$ and $\vec{AD} = \mathbf{b}$

(a) find, in terms of \mathbf{a} or \mathbf{b} or \mathbf{a} and \mathbf{b} where appropriate, a simplified expression for

- (i) \vec{AC} (ii) \vec{CO} (iii) \vec{DB} (4)

E is the point such that CEO and DEB are straight lines.

By considering both $\vec{AD} + \vec{DE}$ and $\vec{AC} + \vec{CE}$

(b) find a simplified expression for \vec{AE} in terms of \mathbf{a} and \mathbf{b} (5)

Given that $|\mathbf{a}| = 7 \text{ cm}$ and $|\mathbf{b}| = 6 \text{ cm}$,

(c) calculate the exact area, in cm^2 , of $\triangle ABC$ (4)

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Question 9 continued

Handwriting practice area with horizontal dotted lines.



Question 9 continued

Handwriting practice area with 20 horizontal dotted lines.

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Question 9 continued

Handwriting practice area with horizontal dotted lines.

(Total for Question 9 is 13 marks)



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