

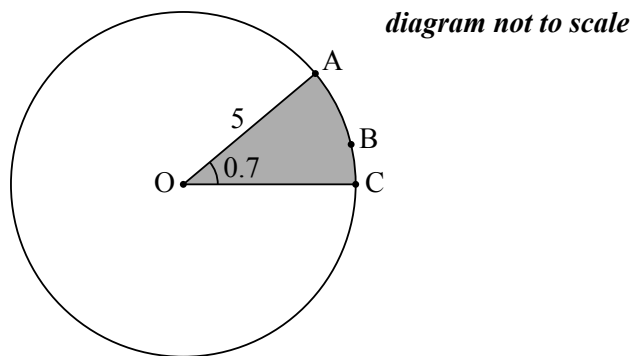
Full marks are not necessarily awarded for a correct answer with no working. Answers must be supported by working and/or explanations. In particular, solutions found from a graphic display calculator should be supported by suitable working, for example if graphs are used to find a solution, you should sketch these as part of your answer. Where an answer is incorrect, some marks may be given for a correct method, provided this is shown by written working. You are therefore advised to show all working.

SECTION A

Answer **all** questions in the boxes provided. Working may be continued below the lines if necessary.

1. [Maximum mark: 6]

The following diagram shows a circle with centre O and radius 5 cm.



The points A, B and C lie on the circumference of the circle, and $\widehat{AOC} = 0.7$ radians.

(a) (i) Find the length of the arc ABC.

(ii) Find the perimeter of the shaded sector.

[4]

(b) Find the area of the shaded sector.

[2]

Answer below:

5. [Maximum mark: 7]

In triangle ABC, $AB = 6\text{ cm}$ and $AC = 8\text{ cm}$. The area of the triangle is 16 cm^2 .

(a) Find the two possible values for \hat{A} . [4]

(b) Given that \hat{A} is obtuse, find BC. [3]

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5. [Maximum mark: 7]

Given that $\sin x = \frac{3}{4}$, where x is an obtuse angle, find the value of

(a) $\cos x$;

No Calculator

[4]

(Use the formula sheet)

(b) $\cos 2x$.

[3]

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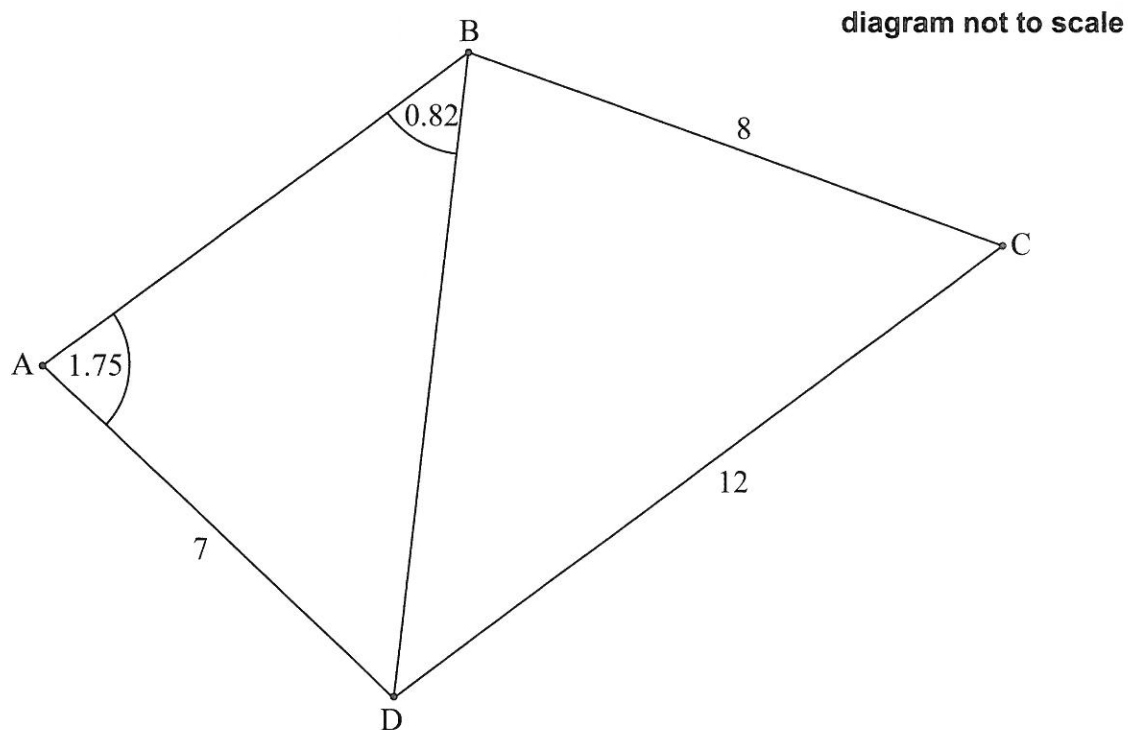
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2. [Maximum mark: 6]

The following diagram shows a quadrilateral ABCD.



$AD = 7 \text{ cm}$, $BC = 8 \text{ cm}$, $CD = 12 \text{ cm}$, $\hat{DAB} = 1.75 \text{ radians}$, $\hat{ABD} = 0.82 \text{ radians}$.

(a) Find BD . [3]

(b) Find \hat{DBC} . [3]

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