

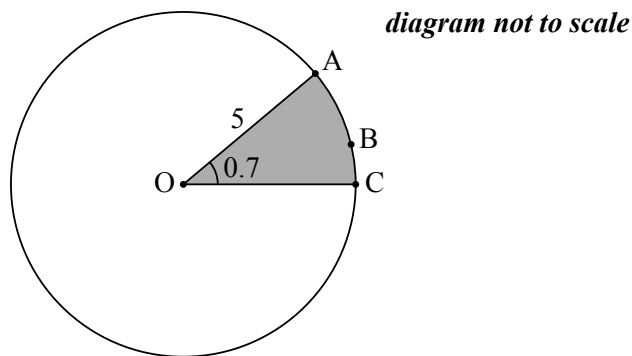
*Full marks are not necessarily awarded for a correct answer with no working. Answers must be supported by working and/or explanations. In particular, solutions found from a graphic display calculator should be supported by suitable working, for example if graphs are used to find a solution, you should 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  $16\text{ cm}^2$ .

(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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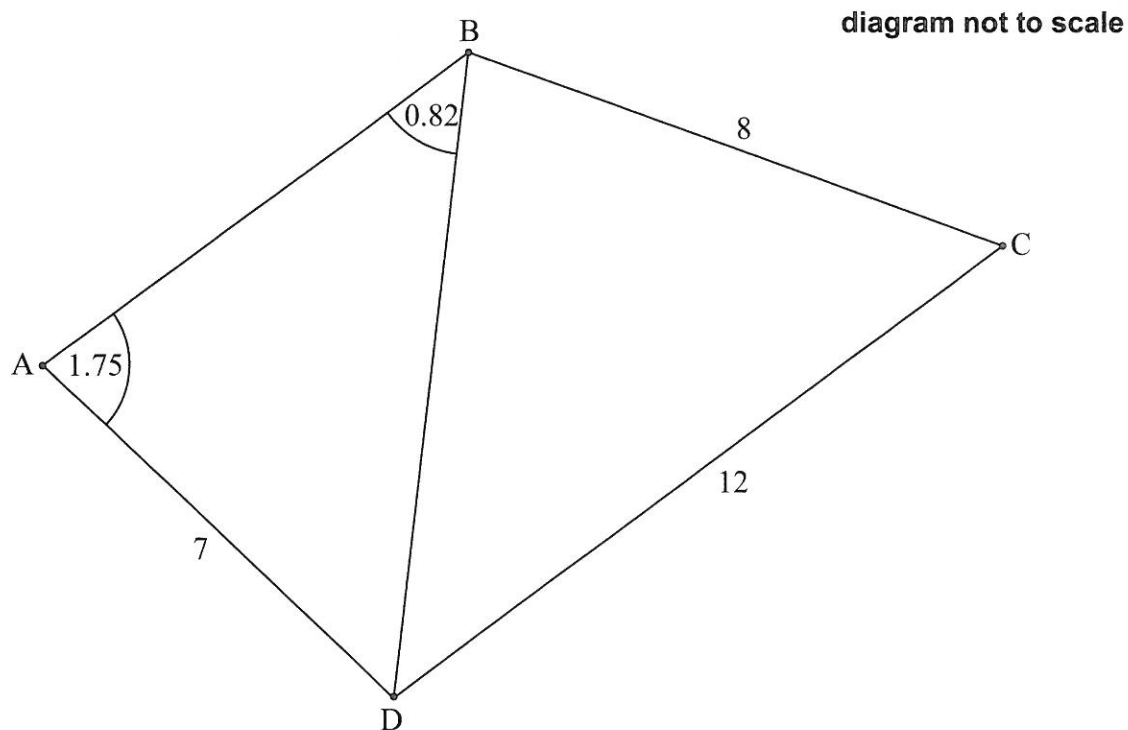
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2. [Maximum mark: 6]

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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