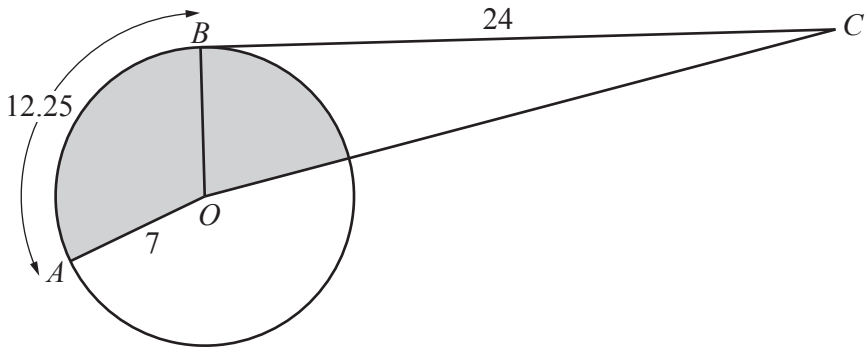
8 In this question all lengths are in metres.



The diagram shows a circle, centre O, radius 7. The points A and B lie on the circumference of the circle. The line BC is a tangent to the circle at the point B such that the length of BC is 24. The length of the minor arc AB is 12.25.

(a) Find the obtuse angle AOB, giving your answer in radians. [1]

(b) Find the perimeter of the shaded region. [4]

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(c) Find the area of the shaded region. [2]

9 A 6-character password is to be formed from the following characters.

Letters	A	B	C	D
Numbers	1	2	3	4
Symbols	*	#	$	£

No character may be used more than once in any password.

(a) (i) Find the number of different 6-character passwords that can be formed. [1]

(ii) How many of these 6-character passwords end with a symbol? [1]

(b) Find the number of different 6-character passwords that include all the symbols, but do not start or end with a symbol. [2]

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