

3.2 Radian Measure

Question Paper

Course	Edexcel IAL Maths: Pure 1
Section	3. Trigonometry
Topic	3.2 Radian Measure
Difficulty	Easy

Time allowed: 40

Score: /31

Percentage: /100

Question 1

Without using a calculator, write down:

- (i) 60° in radians,
- (ii) $\sin 45^\circ$
- (iii) $\tan \pi$
- (iv) $\frac{5\pi}{6}$ radians in degrees
- (v) $\cos 0$

[5 marks]**Question 2**

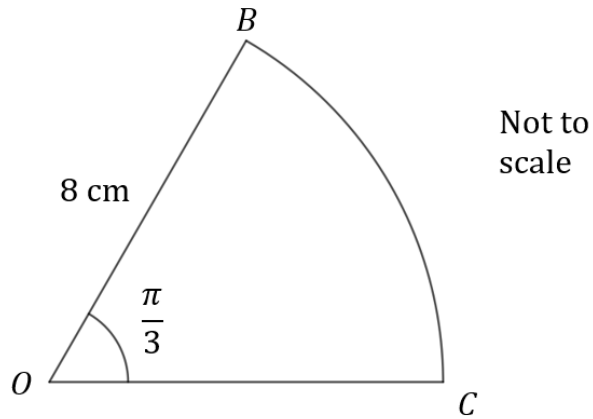
A sector of a circle, OPQ , is such that it has radius 4 cm and the angle at its centre, O , is $\frac{\pi}{4}$ radians.

- (i) Find the length of the arc PQ .
- (ii) Find the area of the sector OPQ .

[4 marks]

Question 3

The sector of a circle is shown below.



Find the perimeter of the sector.

[3 marks]

Question 4

The area of a quarter circle is $18\pi \text{ cm}^2$.

Find the radius of the circle.

[3 marks]

Question 5

Find all the solutions to the equation $2 \sin \theta = \sqrt{3}$ for $-2\pi \leq \theta \leq 2\pi$.

[4 marks]

Question 6

The arc length of the sector of a circle is 5 cm.

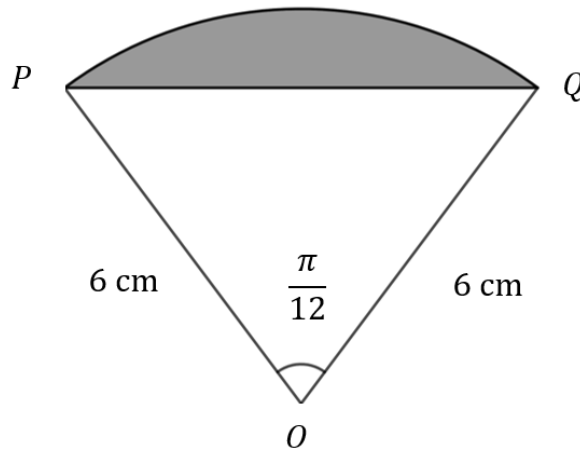
The radius is twice the length of the arc.

Find the angle at the centre of the circle.

[2 marks]

Question 7

The diagram below shows the sector of a circle, OPQ , radius 6 cm and centre angle $\frac{\pi}{12}$ radians.



Not to scale

(a) Use the formula $\frac{1}{2}ab \sin C$ to find the area of the triangle OPQ .

[2 marks]

Question 7

(b) Find the area of the sector OPQ .

[2 marks]

Question 7

(c) Hence or otherwise find the area of the shaded segment.

[2 marks]

Question 8

The area of a sector is $8\pi \text{ cm}^2$.

The arc length of the sector is $4\pi \text{ cm}$.

Find the radius and the angle at the centre of the circle.

[4 marks]