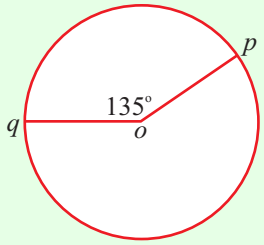
TIIGONOMETRY (Q 5, PAPER 2)

LESSON NO. 3: SECTOR OF A CIRCLE

2005

5 (a) A circle has centre o and radius 14 cm.
p and q are two points on the circle and
$|\angle qop| = 135^\circ$.
Find the length of the shorter arc pq.
Take $\pi = \frac{22}{7}$.



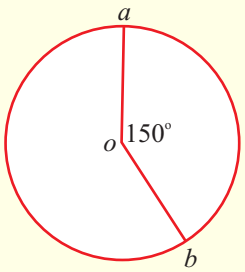
2004

5 (b) A circle has centre o and radius 4 cm.
a and b are two points on the circle and
$|\angle aob| = 150^\circ$.

(i) Find the area of the circle, correct to the nearest cm^2.

(ii) Find the area of the sector aob, correct to the nearest cm^2.

(iii) Find the length of the shorter arc ab, correct to the nearest cm.



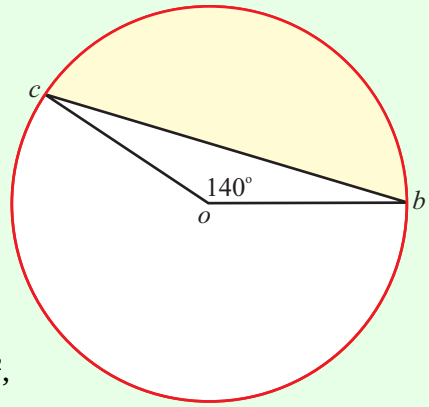
2003

5 (b) A circle has centre o and radius 7 cm.
The two points b and c are on the circle and $|\angle boc| = 140^\circ$.

(i) Find the area of the triangle obc, correct to the nearest cm^2.

(ii) Find the area of the sector obc, correct to the nearest cm^2.

(iii) Taking the areas correct to the nearest cm^2, express the area of the shaded region as a fraction of the total area enclosed by the circle. Give your answer as a fraction in its simplest form.

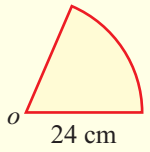


2002

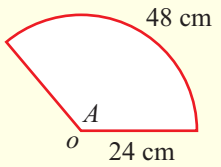
5 (b) A circle has radius 24 cm and centre o.

(i) Calculate the area of a sector which has 70° at o.

Take $\pi = \frac{22}{7}$.



(ii) An arc of length 48 cm subtends an angle A at o.
Calculate A, correct to the nearest degree.



1999

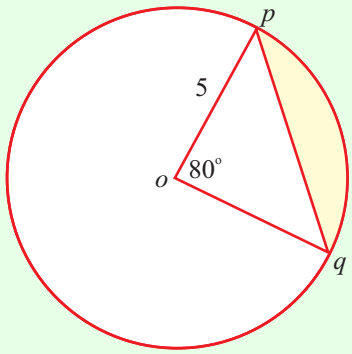
5 (b) In the diagram, o is the centre of the circle with radius length 5 and p and q are points on the circle.

$|\angle poq| = 80^\circ$.

Find, correct to two places of decimals,

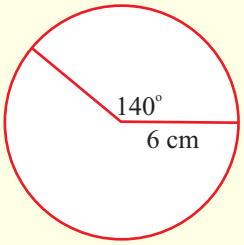
(i) the area of triangle poq

(ii) the area of the shaded region, taking $\pi = 3{\cdot}14$.



1998

5 (a) The angle at the centre of a sector of a disc measures 140°.
The radius of the disc measures 6 cm.
Find, in terms of π, the area of the sector.



1996

5 (a) Find the length of an arc of a circle of radius length 6 cm subtending an angle of 120° at the centre. Give your answer in terms of π.

Answers

2005	5	(a) 33 cm		
2004	5	(b) (i) 50 cm^2	(ii) 21 cm^2	(iii) 10 cm
2003	5	(b) (i) 16 cm^2	(ii) 60 cm^2	(iii) $\frac{2}{7}$
2002	5	(b) (i) 352 cm^2	(ii) 115°	
1999	5	(b) (i) 12·31 units^2	(ii) 5·13 units^2	
1998	5	(a) 14π cm^2		
1996	5	(a) 4π		