Circle 1   Int 2 PP 2001 -2008
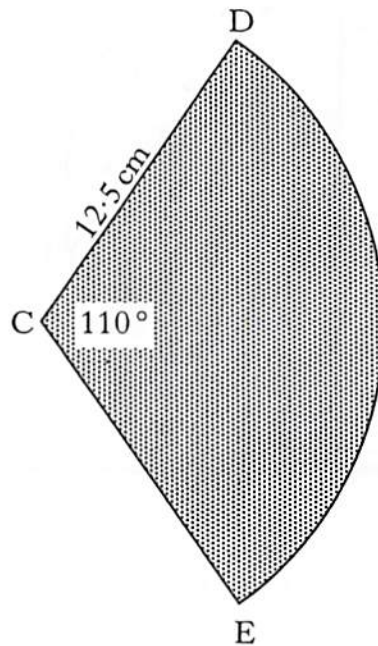
2005 P2 calculator

5. The diagram below shows a sector of a circle, centre C.
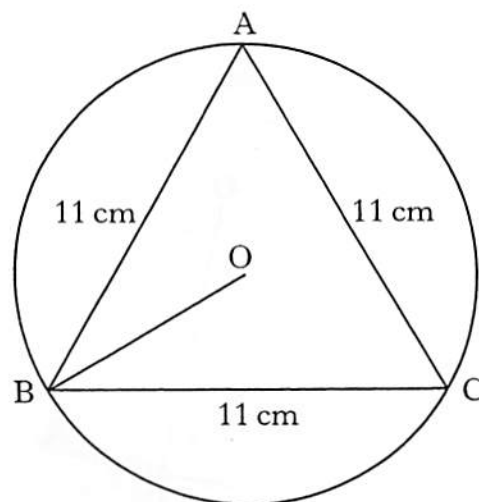

The radius of the circle is 12·5 centimetres and angle DCE is 110°.

Calculate the area of the sector CDE.

3

2005 P2 calculator

9. Points A, B and C lie on the circumference of a circle, centre O.
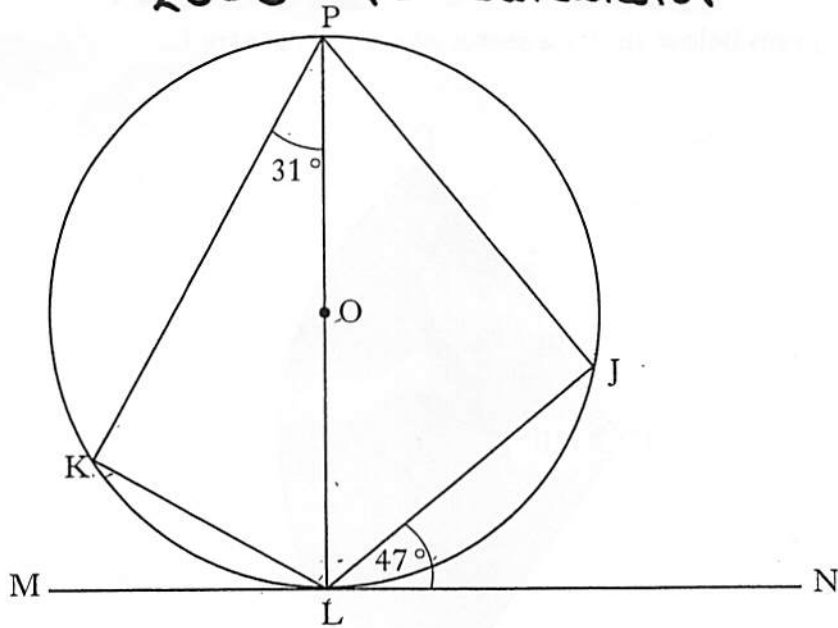

Triangle ABC is equilateral with sides of length 11 centimetres as shown in the diagram.

(a) Write down the size of angle OBC.

1

(b) Calculate the length of the radius OB.

3

Circle 1   Int 2 PP 2001 -2008

1.

O

2003 P2 calculator
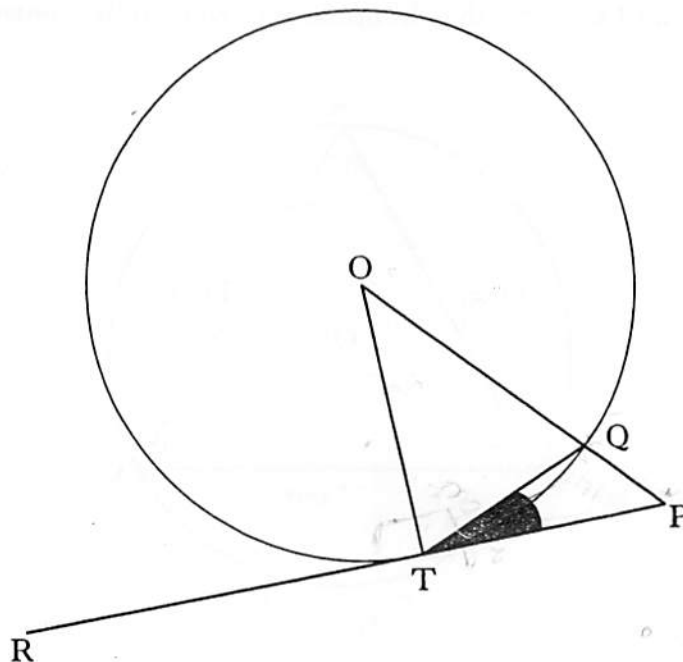

The tangent, MN, touches the circle, centre O, at L.

Angle JLN = 47°.

Angle KPL = 31°.

Find the size of angle KLJ.

3

3.

E

2004 P1 non-calculator

RP is a tangent to the circle, centre O, with a point of contact T.

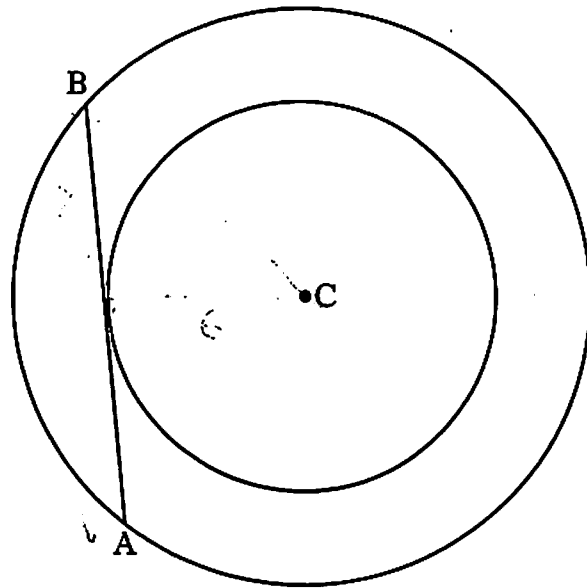The shaded angle PTQ = 24°.

Calculate the size of angle OPT.

3

ß   7.   2003 P1 non-calculator

C is the centre of two concentric circles.

AB is a tangent to the smaller circle and a chord of the larger circle.

The radius of the smaller circle is 6 centimetres and the chord AB has length 16 centimetres.
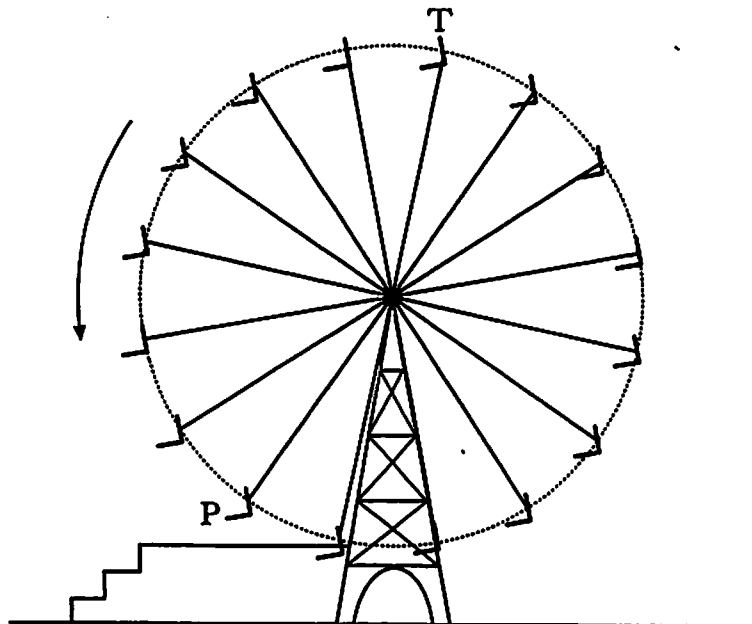
Calculate the radius of the larger circle.   3

2003 P2 calculator

8. The diagram below shows a big wheel at a fairground.

C

The wheel has sixteen chairs equally spaced on its circumference.

The radius of the wheel is 9 metres.

As the wheel rotates in an anticlockwise direction, find the distance a chair travels in moving from position T to position P in the diagram.   4
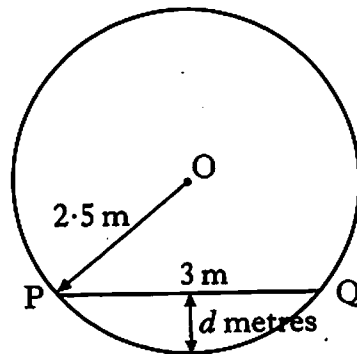
A

2002 P2 - calculator

9. The diagram below shows a circular cross-section of a cylindrical oil tank.

In the figure below,

- O represents the centre of the circle
- PQ represents the surface of the oil in the tank
- PQ is 3 metres
- the radius OP is 2·5 metres.

Find the depth, d metres, of oil in the tank.

4