



SmartKeeda

The Question Bank

Presents

TestZone

India's least priced Test Series platform

JOIN

12 Month Plan

2017-18 All Test Series

@ Just

₹ 399/-

300+ Full Length Tests

- Brilliant Test Analysis
- Excellent Content
- Unmatched Explanations

JOIN NOW

Circle Questions for CGL Tier 1, CGL Tier 2, SSC 10 + 2, Railways Exam.

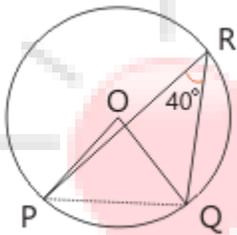
Circle Quiz 8

Directions: Kindly study the following Questions carefully and choose the right answer:

1. PQ is a chord of a circle with centre O and SOR is a line segment originating from a point S on the circle and intersecting PQ produced at R such that QR = OS. If $\angle QRO = 30^\circ$ then $\angle POS = ?$

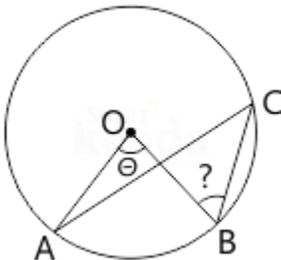
- A. 40° B. 70° C. 90° D. 60°

2. O and O' are respectively the orthocentre and circumcentre of an acute angled triangle PQR. the point P and O are joined and produced to meet the side QR at S. If $\angle PQS = 60^\circ$ and $\angle QO'R = 130^\circ$ then $\angle RPS = ?$



- A. 45° B. 35° C. 60° D. 75°

3. In the given figure below, $\angle AOB = 48^\circ$ and AC and OB intersect each other at right angles. What is the measure of $\angle OBC$? (O is the centre of the circle)

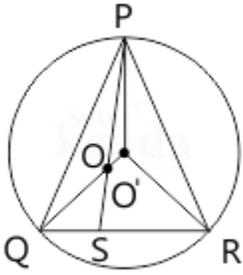


- A. 44° B. 66° C. 67° D. 78.5°

4. In a right angled triangle, the circumcentre of the triangle lies.

- A. inside the triangle B. outside the triangle C. on the midpoint of hypotenous
D. on one vertex

2.



$$\angle PQS = 60^\circ$$
$$\angle QO'R = 130^\circ$$

$$\angle QPR = \frac{1}{2} \times 130^\circ = 65^\circ$$

$$\Rightarrow \angle QRP = 180^\circ - 60^\circ - 65^\circ = 55^\circ$$

$$\Rightarrow \angle PO'Q = 110^\circ$$

In $\triangle QO'R$

$$QO' = O'R$$

$$\Rightarrow \angle O'QR = \angle O'RQ = 25^\circ$$

$$\because \angle O'QR + \angle O'RQ = 50^\circ$$

$$\Rightarrow \angle PQQ' + \angle QPO' = 35^\circ$$

$$\because \angle PQQ' + \angle QPO' = 70^\circ$$

Similarly, $\angle O'PR = 30^\circ$

$$\therefore \angle RPS = 35^\circ$$

Hence, option (B) is correct.

3. $\angle AOB = 48^\circ$

$$\text{So, } \angle ACB = \frac{1}{2} \angle AOB$$

$$= \frac{1}{2} \times 48^\circ = 24^\circ$$

(As angles made by same arc AB)

Given AC and OB intersect each other at right angle.

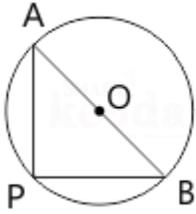
$$\angle CQB = 90^\circ$$

$$\angle CBQ = 180^\circ - (90^\circ + 24^\circ) = 66^\circ$$

$$\text{so, } \angle OBC = 66^\circ$$

Hence, option B is correct

4.



$$\angle APB = 90^\circ$$

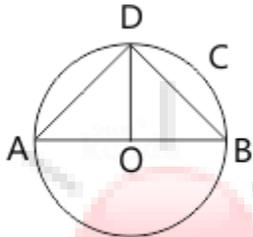
AB = Diameter = Hypotenous of triangle APB

As, the angle of semicircle is right angle

so, the circumcentre lies on midpoint of hypoteneous

Hence, option (C) is correct.

5.



In ΔAOD :

$$OA = OD \text{ (radius)}$$

$$\angle AOD = 90 \text{ (as OD is perpendicular to AB)}$$

So ΔAOD is isosceles having OA and OD sides equal and one angle as 90

So the remaining wo angles are 45 each

$$\text{Hence } \angle BAD = 45^\circ$$

Therefore, option (B) is correct.

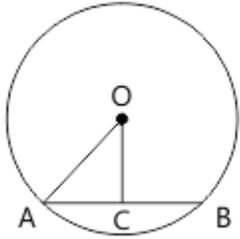
6. Circumference of wheel = $2\pi r$

$$= 2 \times \frac{22}{7} \times 21 \text{ cm} = 132 \text{ cm}$$

$$\therefore \text{Number of revolutions} = \frac{92400 \text{ cm}}{132 \text{ cm}} = 700$$

Hence, option D is correct.

7.



Here, AB is the chord of length 10 cm
i.e. $AB = 10$ cm.

$$\text{So, } AC = CB = \frac{10}{2} = 5\text{cm}$$

$$\Rightarrow AC = 5\text{cm}$$

Here, AO is the required length as AO is the radius of the circle & we know $OC = 12$ cm

Applying Pythagoras theorem

$$\Rightarrow AC^2 + OC^2 = AO^2$$

$$AO^2 = (5)^2 + (12)^2$$

$$AO^2 = 25 + 144$$

$$AO^2 = 169$$

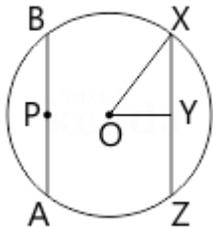
$$AO = 169$$

$$AO = 13$$

So, the radius of the circle is 13 cm

Hence, option B is correct.

8.



$$OX = \text{Radius} = \frac{\text{Diameter}}{2}$$

$$\text{So, } OX = \frac{26}{2} = 13 \text{ cm}$$

$$\text{as, } XZ = 10 \text{ cm}$$

$$\therefore XY = 5 \text{ cm}$$

Now, we have to find OY

So, using pythagoras theorem

$$OY = \sqrt{OX^2 - XY^2} = \sqrt{(13)^2 - (5)^2}$$

$$= \sqrt{169 - 25} = \sqrt{144} = 12$$

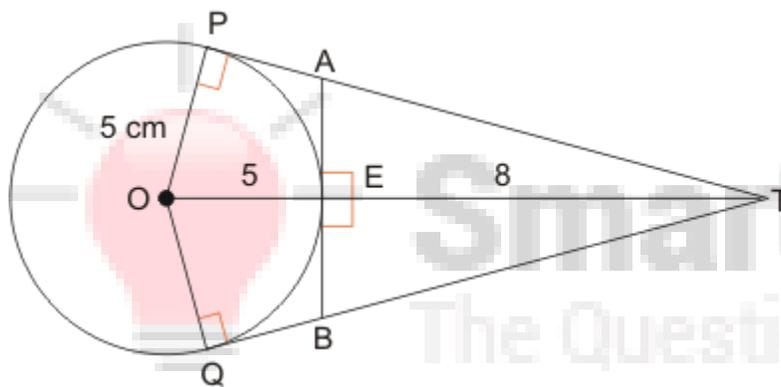
As $OY = 12$ cm

So, $OP = 12$ cm

Hence, $PY =$ Distance between the chords $= 12 \times 2 = 24$ cm

Therefore, option B is correct.

9.



$$OT = 13\text{cm.}, OP = 5\text{ cm. } PT^2 = OT^2 - OP^2 \quad PT^2 = 13^2 - 5^2 \quad PT = 12\text{ cm}$$

In ΔTPO and ΔTEA ,

$\angle PTO \cong \angle ETA$ (same angles)

$\angle OPT \cong \angle TEA$ (right angles)

By AA criterion, $\Delta TPO \sim \Delta TEA$

$$\frac{TP}{TE} = \frac{PO}{EA}$$

$$\frac{12}{8} = \frac{5}{EA}$$

$$EA = \frac{10}{3}$$

$$AB = 2EA = \frac{20}{3}$$

Hence, option (B) is correct.

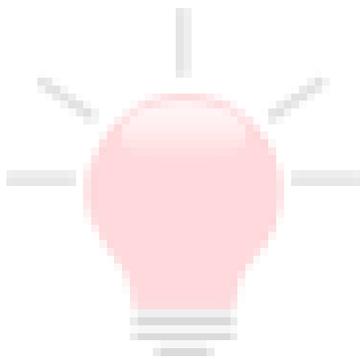
10. Tangent and radius are perpendicular to each other. They form a right angled triangle with radius and the length of the tangent as arms of right angle and the 13 cm line from centre to the point lying outside as hypotenuse.

$$\therefore (\text{The length of the tangent})^2 + (\text{radius})^2 = 13^2$$

$$(\text{The length of the tangent})^2 = 13^2 - 5^2 = 144$$

$$\Rightarrow \text{The length of the tangent} = 12 \text{ cm}$$

Hence, option (D) is correct.



SmartKeeda
The Question Bank



SmartKeeda
The Question Bank

प्रस्तुत करते हैं

TestZone

भारत की सबसे क़िफ़ायती टेस्ट सीरीज़

अभी
जुड़ें

12 Month Plan

2017-18 All Test Series

@ Just

₹ 399/-

300+ फुल लेन्थ टेस्ट

- श्रेष्ठ विश्लेषण
- उत्कृष्ट विषय सामग्री
- बेजोड़ व्याख्या

अभी जुड़ें