MATHS

BOOKS - MBD

Circles

Example

1. How many tangents can a circle have ?

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2. Fill in the blanks : A tangent to a circle intersects it in ..... point(s).

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3. Fill in the blanks : A line intersecting a circle in two points is called a...

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4. Fill in the blanks : A circle can have..... parallel tangents at the most.

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5. Fill in the blanks : The common point of a tangent to a circle and the circle is called.....

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6. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q so that OQ = 12 cm. Length PQ is:

A. 12 cm

B. 13 cm

C. 8.5 cm

D. $\sqrt{119}$cm

Answer:

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7. Draw a circle and two lines parallel to a given line such that one is a tangent and other a secant to the circle

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Exercise

1. Fill in blanks-

A secant drawn to a circle intersect the circle in ___points.

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2. Fill in blanks-

From a point outside a circle exactly ___tangents can be drawn to the circle.

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3. Fill in blanks-

The tangent at any point of a circle is _____to the radius through the point of contact.

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4. A point P is 25 cm from the center of a circle. The radius of the circle is 7 cm and length of the tangent drawn from P to the circle is :

A. 24 cm

B. 26 cm

C. 12 cm

D. $\sqrt{46}cm$

Answer:

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5. A point P is 20 cm from the center of a circle.The radius of the circle is 12cmand length of the tangent drawn from P to the circle is:

A. 18 cm

B. 14 cm

C. 20 cm

D. 16 cm

Answer:

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6. A tangent PQ at a point P of a circle of radius 7 m meets a line through the center O at a point Q so that OQ = 11 m. Length PQis:

A. $7\sqrt{2}cm$

B. 4 cm

C. 6 cm

D. $6\sqrt{2}cm$

Answer:

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7. From a point Q, the length of the tangent to a circle is 24 cm and the distance of Q from the centre is 25 cm. The radius of the circle is

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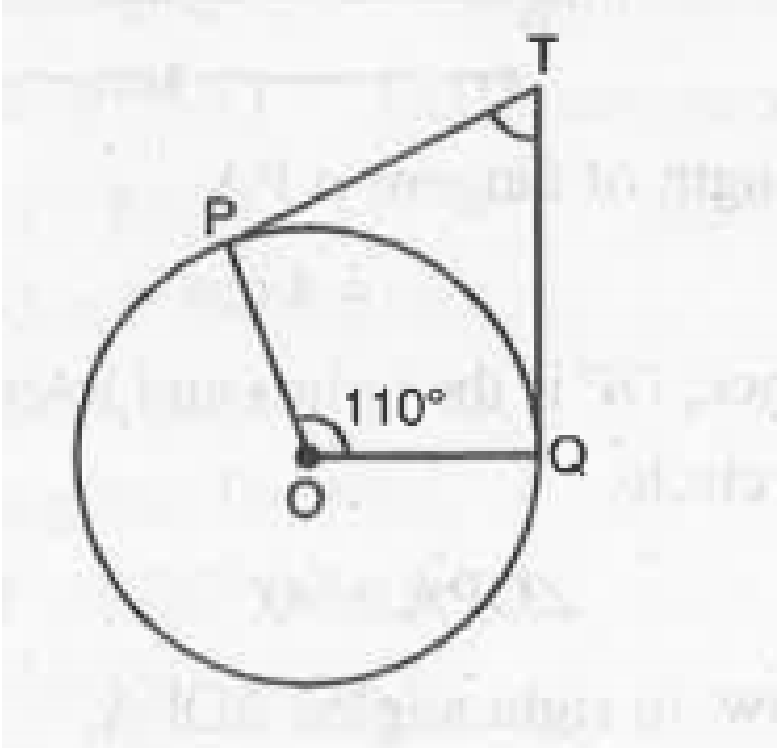
8. In Fig., if TP and TQ and two tangents to a circle with centre O so that ZPOQ = 110°, then

ZPTQ is equal to



A. 60°

B. 70°

C. 80°

D. 90°

Answer:

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9. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 80°, then $\angle$POA is equal to

A. 50°

B. 60°

C. 70°

D. 80°

Answer:

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10. Prove that the tangents drawn at the ends of a diameter of a circle are parallel.

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11. Prove that the angle between the two tangents drawn from an external point to a circle is supplementary to the angle

subtended by the line segment joining the points of contact at the centre.

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12. Prove that the parallelogram circumscribing a circle is a rhombus.

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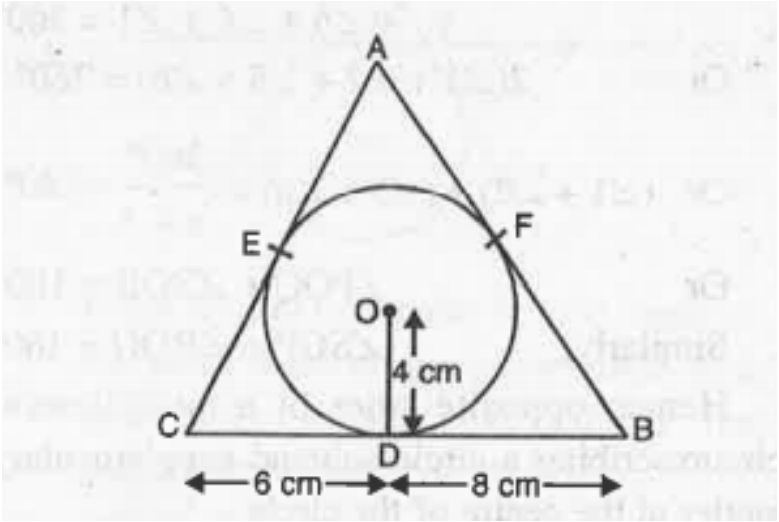
13. A triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments

BD and DC into which BC is divided by the point of contact Dare of lengths 8 cm and 6 cm respectively (see Fig). Find the sides AB and AC.



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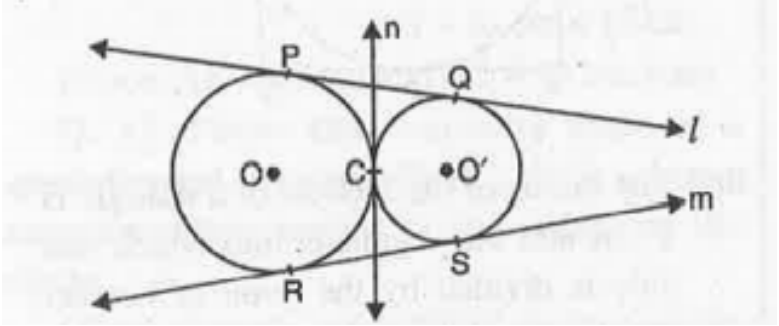
14. In the figure, two circles touch each other externally at C. Prove that the common tangent at C bisects the other two common tangents.



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15. If a rectangle be circumscribed about a circle prove that it is a square.

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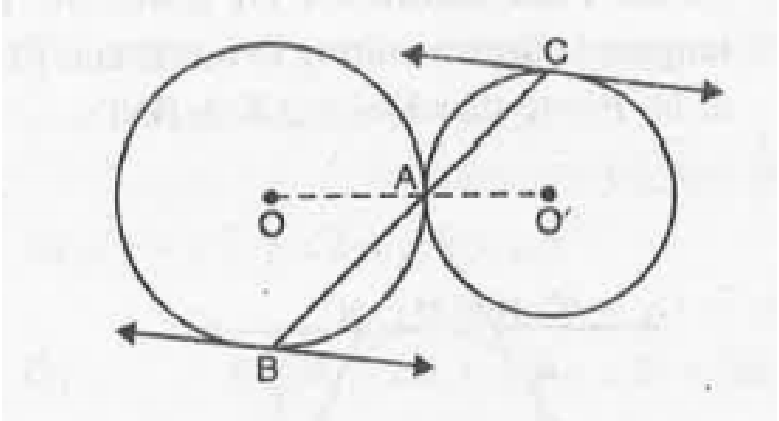
16. In fig., two circles with centres O, O' touch externally at a point A. A line through A is drawn to intersect these circles in B and C.

Prove that the tangents at B and C are parallel.



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17. Two circles touch externally at a point P. From a point T on the tangent at P, tangents TQ and TR are drawn to the circles with points

of contact Q and R respectively. Prove that TQ = TR

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18. Two tangents TP and TQ are drawn to a circle with centre O from an external point T. Prove that $\angle PTQ = 2\angle OPQ$.

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