MATHS

BOOKS - CAMBRIDGE MATHS (KANNADA ENGLISH)

CIRCLES

Exercise 4 1

1. How many tangents can a circle have ?

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2. 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: $\therefore t = \sqrt{119}$

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3. Draw a circle and two lines paralllel to a given line such that one is a tangent and the other , a secant to the circle .

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Exercise 4 1 Fill In The Blanks

1. A tangents to a circle intersects it in only one points (s)

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2. A line intersecting a circle in two points is called a secant .

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3. Fill in the blanks

(iii) A circle can have .....parallel tangents at the most.

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4. Fill in the blanks

(iv) The common point of a tangent to a circle and the circle is called .....

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Exercise 4 2

1. 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

A. 7 cm

B. 12 cm

C. 15 cm

D. 24.5 cm

Answer: $\therefore$ **The radius of the circle = 7 cm .**

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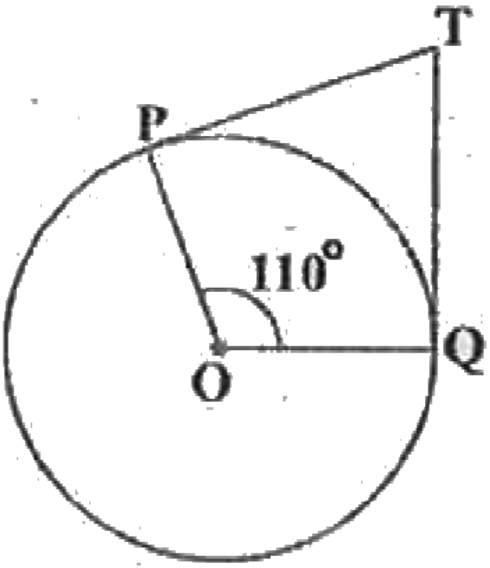
2. In the Fig, if TP and TQ are the two tangents to a circle with centre O so that

$\angle POQ = 110^\circ$, then $\angle PTQ$ is equal to



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3. 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: $= 180^\circ - 130^\circ = 50^\circ$

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

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5. Prove that the perpendicular at the point of contact to the tangent to a circle passes through the centre .

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6. The length of a tangent from a point A at distance 5 cm from the centre of the circle is 4 cm . Find the radius of the circle .

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7. Two concentric circle of radii 5 cm and 3cm are drawn. Find the length of the chord of the larger circle which touches the smaller circles.

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8. A quadrilateral ABCD is drawn to circumscribe a circle as shown . Prove that $AB + CD = AD + BC$

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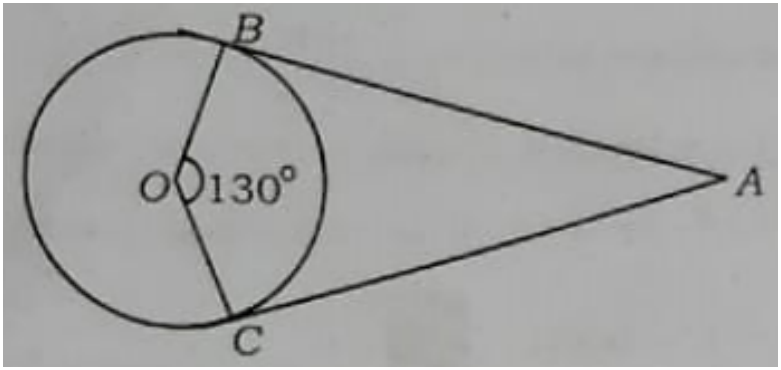
9. In the figure AB and AC are the two tangents drawn from the point A to the circle with centre O, If AngleBOC = 130* then find

AngleBAC



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10. 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

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11. Write the inverse , converse of 'If a parallelogram is a square , then it is a rhombus.

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12. 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 D are of lengths 8 cm and 6

cm respectively as shown in the figure . Find the sides AB and AC .

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13. Prove that the "Length of tangents drawn from an external point a circle are equal".

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