MATHS

NCERT - NCERT MATHS (KANNADA ENGLISH)

CIRCLES

Example

1. Construct a circumcircle of the triangle ABC where AB = 5cm, $\angle B = 75^\circ$ and BC = 7cm

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2. Let 'O' be the centre of a circle, PQ is a diameter, then prove that $\angle PRQ = 90^\circ$ (OR) Prove that angle in a semi-circle is right angle.

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3. Find the value of x° in the adjacent figure

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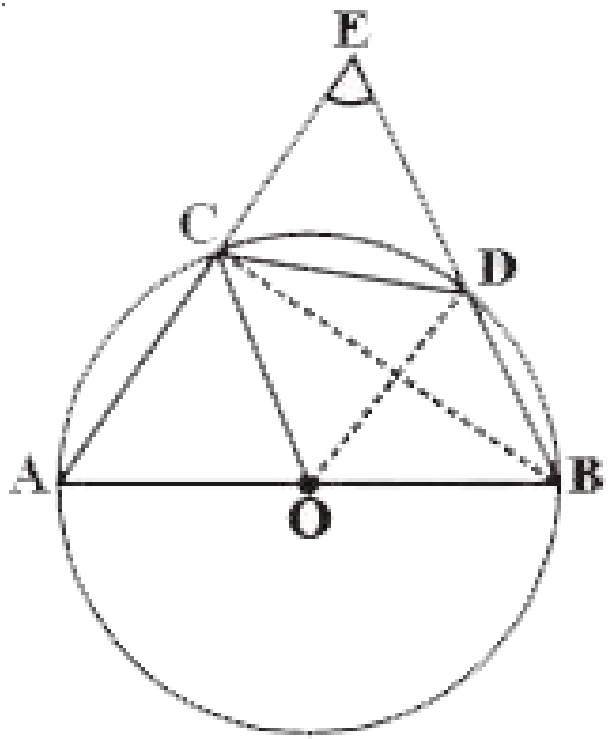
4. In figure, $\overline{AB}$ is a diameter of the circle, $\overline{CD}$ is a chord equal to the radius of the circle. $\overline{AC}$ and $\overline{BD}$ when extended intersect at a point E. Prove that $\angle AEB = 60^\circ$.



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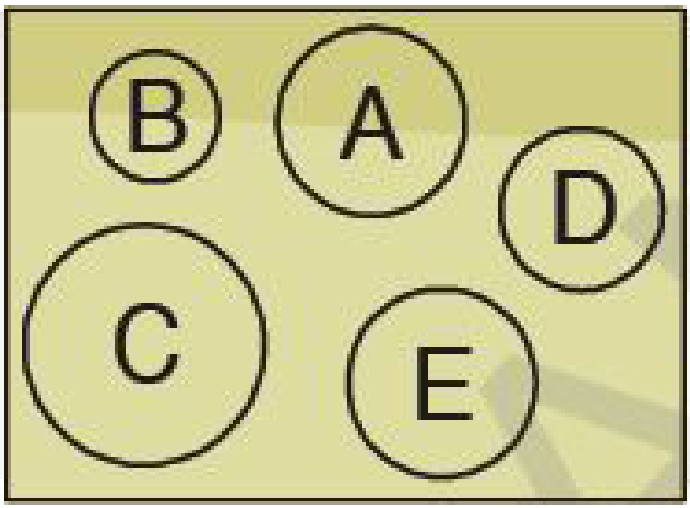
Do This

1. In the figure, which circles are congruent to the circle A?



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2. What measure of the circles make them congruent?

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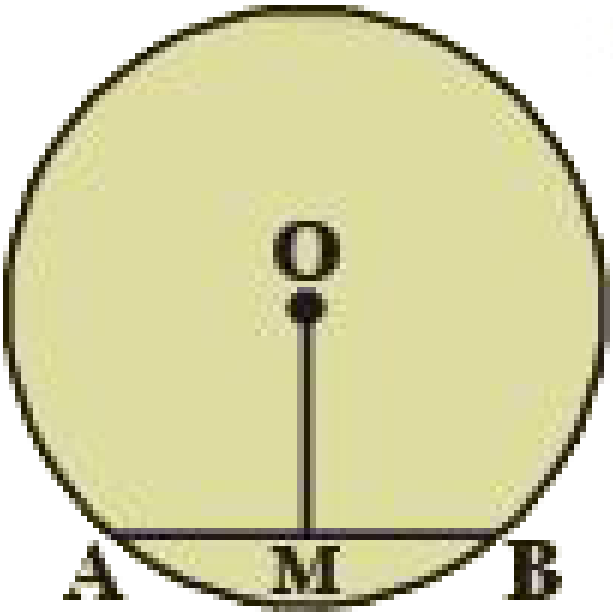
Try This

1. In a circle with centre 'O' . $\overline{AB}$ is a chord and 'M' is its midpoint . Now prove that OM is

perpendicular to AB



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2. if three points are collinear , how many circles can be drawn through these points?

Now, try to draw a circle passing through these three points.

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3. In the figure, O is the centre of the circle and AB = CD. OM is perpendicular on $\overline{AB}$ and $\overline{ON}$ is perpendicular on $\overline{CD}$. Then prove that OM =

ON.

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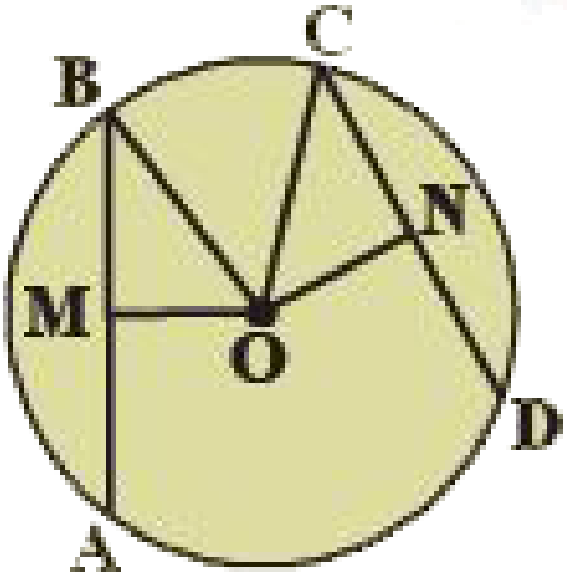

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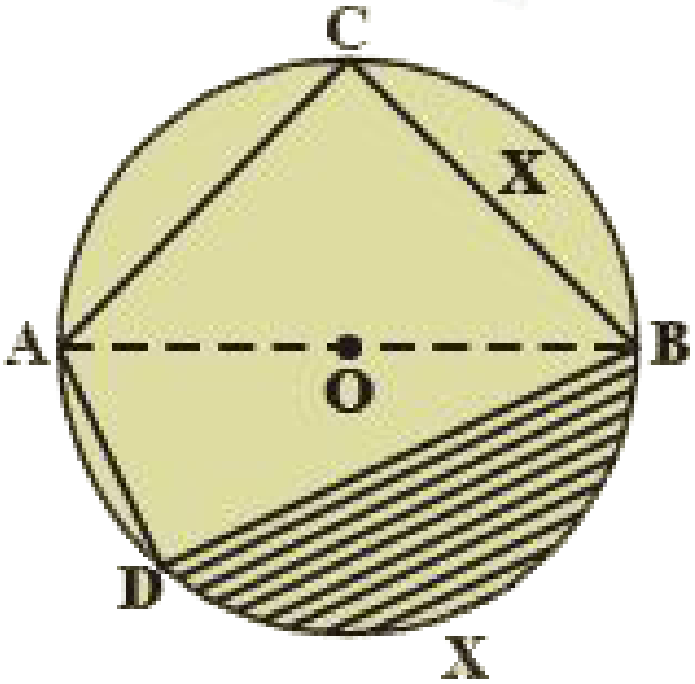
Exercise 12 1

1. Name the following parts from the adjacent figure where 'O' is the centre of the circle



(i) $\overline{AO}$ (ii) $\overline{AB}$ (iii) $\overset{\frown}{BC}$

(iv) $\overline{AC}$ (v) $\overset{\frown}{DCB}$ (vi) $\overset{\frown}{ACB}$

(vii) $\overline{AD}$ (viii) shaded region

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2. A circle divides the plane, on which it lies, in _____ parts.

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3. True or False:

Sector is the region between the chord and its corresponding arc.

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4. True or False:

Sector is the region between the chord and its corresponding arc.

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5. State true or false .

A diameter divides the circle into two unequal parts.

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6. State true or false .

A sector is the area enclosed by two radii and a chord

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7. State true or false .

The longest of all chords of a circle is called a diameter.

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8. State true or false .

The mid point of any diameter of a circle is the centre.

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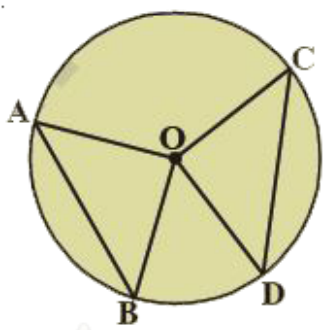
Exercise 12 2

1. In the figure , if AB = CD and $\angle AOB = 90^\circ$ find $\angle COD$



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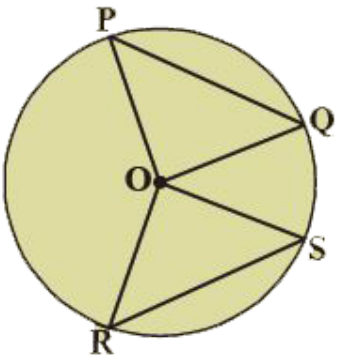
2. In the figure , PQ = RS and $\angle ORS = 48^\circ$.

Find $\angle OPQ$ and $\angle ROS$



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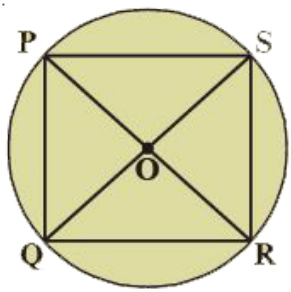
3. In the figure PR and QS are two diameters. Is

PQ = RS?



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Exercise 12 3

1. Draw two circles passing through A, B where AB = 5.4cm

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2. If two circles intersect at two points, prove that their centres lie on the perpendicular bisector of the common chord.

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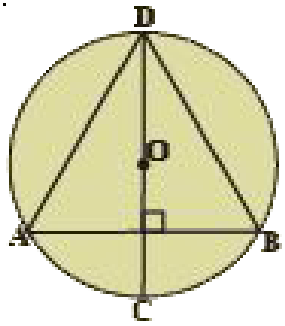
3. In the adjacent figure, AB is a chord of circle with centre O. CD is the diameter perpendicualr to AB. Show that AD = BD



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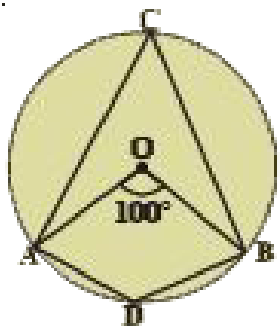
Exercise 12 4

1. In the figure 'O' is the centre of the circle

$\angle AOB = 100^\circ$ find $\angle ADB$



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2. If a parallelogram is cyclic, then it is a rectangle. Justify.

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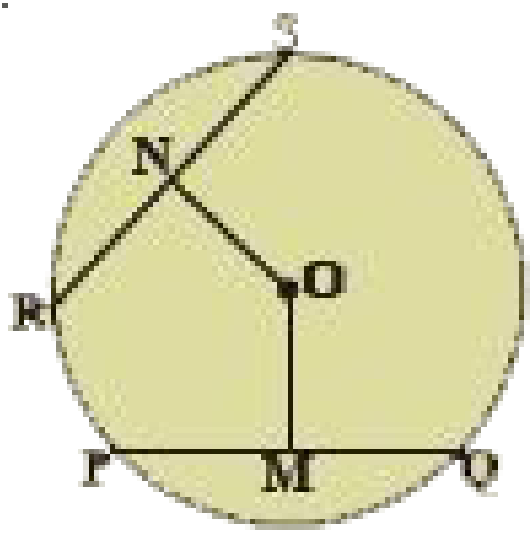
3. In the figure, 'O' is the centre of the circle and OM, ON are the perpendiculars from the centre to the chords PQ and RS. If OM = ON and PQ = 6cm. Find RS



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4. A is the centre of the circle and ABCD is a square. If BD = 4cm then find the radius of the circle

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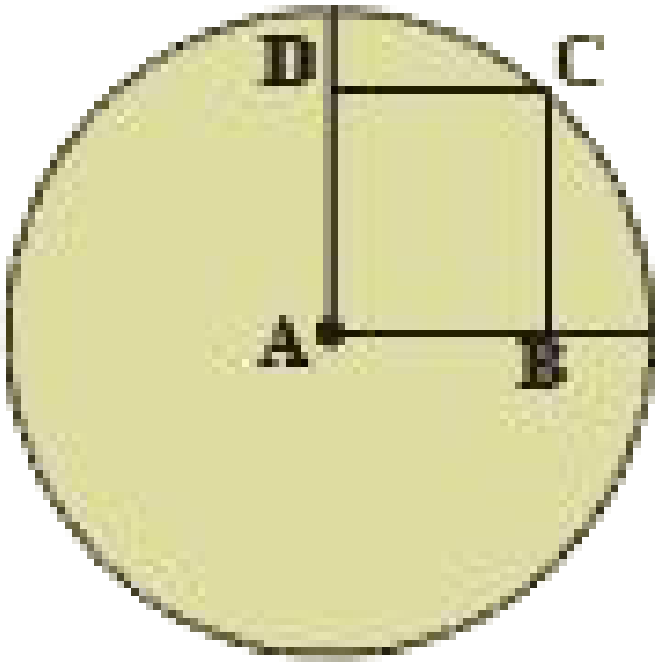

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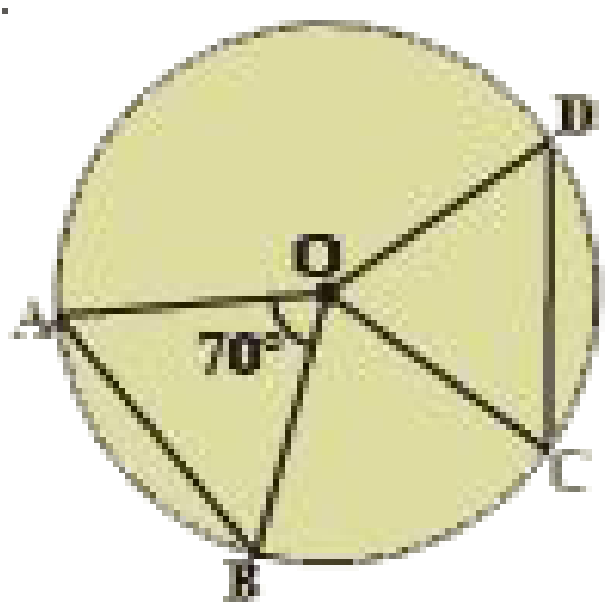
5. In the given figure 'O' is the centre of the circle and AB, CD are equal chords. If $\angle AOB = 70^\circ$. Find the angles of the ΔOCD



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Exercise 12 5

1. Given that the vertices A, B, C of a quadrilateral ABCD lie on a circle. Also $\angle A + \angle C = 180^\circ$, then prove that the vertex D also lie on the same circle.

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2. Prove that a cyclic rhombus is a square

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3. For each of the following, draw a circle and inscribe the figure given. If a polygon of the given type can't be inscribed, write not possible. (a) Rectangle (b)Trapezium (c) Obtuse triangle (d) Non-rectangular parallelogram (e) Accute isosceles triangle

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