Circles

1) State true or false.
   i. A circle divides the plane on which it lies into three parts. ( )
   ii. The region enclosed by a chord and the minor arc is minor segment. ( )
   iii. The region enclosed by a chord and the major arc is major segment. ( )
   iv. A diameter divides the circle into two unequal parts. ( )
   v. A sector is the area enclosed by two radii and a chord ( )
   vi. The longest of all chords of a circle is called a diameter. ( )
   vii. The mid point of any diameter of a circle is the centre. ( )

2) Draw two circles passing through A, B where AB = 5.4cm

3) Draw the following triangles and construct circumcircles for them.
   (i) In ? ABC, AB = 6cm, BC = 7cm and ?A = 60deg
   (ii) In ? PQR, PQ = 5cm, QR = 6cm and RP = 8.2cm
   (iii) In ? XYZ, XY = 4.8cm, ?X = 60deg and ?Y = 70deg

4) If two intersecting chords of a circle make equal angles with diameter passing through their point of intersection, prove that the chords are equal.

5) Let 'O' be the centre of a circle, PQ is a diameter, then prove that ?PRQ = 90o
   (OR) Prove that angle in a semi-circle is right angle.

6) Find the value of x° in the adjacent figure.

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

8) Draw a circle with any radius and then draw two chords equidistant from the centre.

9) Given that the vertices A, B, C of a quadrilateral ABCD lie on a circle. Also ?A + ?C = 180°, then prove that the vertex D also lie on the same circle.

10) If a parallelogram is cyclic, then prove that it is a rectangle.