LOCUS

1. Use ruler and compass for this question. Construct a circle of radius 4.5 cm. Draw a chord. AB = 6 cm.

(i) Find the locus of points equidistant from A and B. Mark the point where it meets the circle as D.

(ii) Join AD and find the locus of points which are equidistant from AD and AB. Mark the point where it meets the circle as C.

(iii) Join BC and CD. Measure and write down the length of the side CD of the quadrilateral ABCD. [2020]

2. Using ruler and a compass only construct a semi-circle with diameter BC = 7 cm. Locate a point A on the circumference of the semicircle such that A is equidistant from B and C. Complete the cyclic quadrilateral ABCD, such that D is equidistant from AB and BC. Measure ∠ADC and write it down. **[4]** [2019]

3. using a ruler and a compass construct a triangle ABC in which AB = 7 cm, ∠CAB = 60° and AC = 5 cm. Construct the locus of: **[4]**

(i) Points equidistant from AB and AC.
(ii) Points equidistant from BA and BC. Hence, construct a circle touching the three sides of the triangle internally. [2017]

4. Use ruler and compasses only for the following question. All construction lines and arcs must he clearly shown.
(i) Construct a Δ ABC in which BC = 6.5 cm, ∠ABC = 60°, AB = 5 cm.
(ii) Construct the locus of points at a distance of 3.5 cm from A.
(iii) Construct the locus of points equidistant from AC and BC.
(iv) Mark 2 points X and Y which are at a distance of 3.5 cm from A and also equidistant from AC and BC. Measure XY. [2016]

5. Construct a triangle ABC with AB = 5.5 cm, AC = 6 cm and ∠BAC = 105°. Hence,
(i) construct the locus of points equidistant from BA and BC.
(ii) Construct the locus of points equidistant from B and C.
(iii) Mark the point which satisfies the above two loci as P. Measure and write the length of PC. **[4]** [2015]

6. Using a ruler and compasses only:
   (i) Construct a triangle ABC with the following data: AB = 3.5 cm, BC = 6 cm and ∠ABC = 120°.
   (ii) In the same diagram, draw a circle with BC as diameter. Find a point P on the circumference of the circle which is equidistant from AB and BC.
   (iii) Measure ∠BCP. **[3]** [2013]

7. Construct a triangle ABC in which base BC = 6 cm, AB = 5.5 cm and ∠ABC = 120°.
   (i) Construct a circle circumscribing the triangle ABC.
   (ii) Draw a cyclic quadrilateral ABCD so that D is equidistant from B and C. **[3]** [2012]

8. Use ruler and compasses only for this question:
   (i) Construct ΔABC, where AB = 3.5 cm, BC = 6 cm and ∠ABC = 60°.
   (ii) Construct the locus of points inside the triangle which are equidistant from BA and BC.
   (iii) Construct the locus of points inside the triangle which are equidistant from B and C.
   (iv) Mark the point P which is equidistant from AB, BC and also equidistant from B and C. Measure and record the length of PB. [2010]