Provincial Department of Education – Sabaragamuwa -   Week School

Subject: Mathematics

Week - 40

Grade: 10

Translated by- Mr Anjana
          Ke/Dehi/ Waharaka Vidyalaya

28th Lesson - Constructions

Construction of Triangles

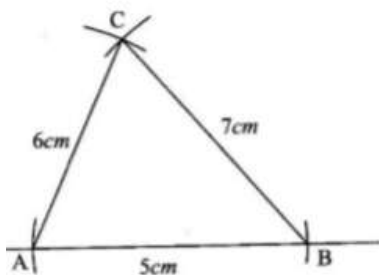1. When the lengths of the three sides of a triangle are given

Construct the triangle ABC such that AB = 5cm, BC = 7cm and AC = 6cm.

Step 1: Draw a straight line segment of length 5cm and name it AB.

Step 2: Take B as the centre and draw a circular arc of radius 7 cm (of sufficient length).

Step 3: Draw another circular arc of radius 9 cm with centre A, such that it intersects the arc drawn in step 2 above.

Step 4: Name the point of intersection of the two arcs as C, and by joining AC and BC, complete the triangle ABC.
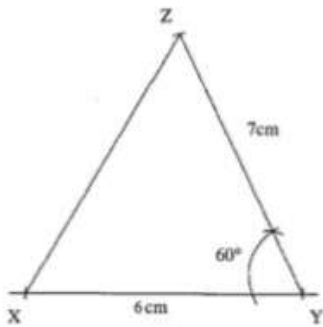

2. When the lengths of two sides and the magnitude of the included angle are given

Construct the triangle XYX such that XY = 6cm, YZ= 7cm and $X\hat{Y}Z = 60°$

Step 1: Construct an angle of 60 degrees and name its vertex Y. The sides of the angle should be longer than the given lengths of the triangle.

Step 2: Mark a straight line segment XY of length 6cm on one side of the angle, and a straight line segment YZ of length 7cm on the other side of the angle. (See the figure)

Step 3: Complete the triangle XYZ by joining XZ.

3. When the magnitudes of two angles and the length of a side are given Construct the triangle ABC such that AB = 6.2cm,

$$A\hat{B}C = 60^0 \qquad\qquad B\hat{A}C = 90^0$$
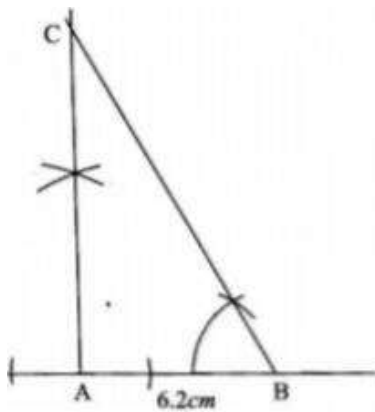
Step 1: Construct a straight line segment of length 6.2 cm and name it AB.

Step 2: Construct the angle at the point B, such that $A\hat{B}C = 60^0$

Step 3: Construct the angle at the point A, such that $B\hat{A}C = 90^0$

Step 4: Name the intersection point of BC and AC as C. Then ABC is the required triangle.

Do all the questions in the exercise 28.2 (pages 123,124)