Practical Geometry

CONSTRUCTION OF PARALLEL LINES:

To draw a line parallel to given line AB through a point P not on it.

Example: Draw a line parallel to a given line AB and passing through the point P not lying in AB.

Solution: Steps of Construction

Step 1. Take any point C on AB .Join P and C.

Step 2. With C as centre and any radius draw an arc cutting AB at D and CP at E.

Step 3. With P as centre and the same radius draw an arc,cutting CP at F.

Step 4. With F as centre and radius equal to DE,draw an arc cutting the previous arc at G.

Step 5. Join PG and product it on both the sides to RS parallel to AB.

Therefore,lines AB and RS are parallel to AB.

To draw a line parallel to a given at a given distance from it

Example: Draw a line parallel to a given line at a distance of 4cm.

Solution:Steps of construction

Step 1. Let AB be a given line.

Step 2. Take any two points P and Q on line AB.

Step 3. Construct angle QPE=90 and anglePQF=90.

Step 4.With P as centre and radius equal to 4cm,cut PC=4cm at C.

Step 5. With Q as centre and radius equal to 4cm,cut QD=4cm at D.

Step 6. Join CD and produce it on either side to get the required line parallel to AB and at a distance of 4cm from it.

Construction of Triangles:

To construct a triangle when its three sides are given

Example: Construct a triangle ABC in which BC=5.5cm,AB=4.5cm,and AC=4cm

Solution:Steps of Construction

Step1. Draw a line segment BC=5.5cm.

Step2. With B as centre and radius 4.5cm,draw an arc.

Step 3. With C as centre and radius as 4cm,draw another arc,cutting the previous arc at A.

Step4. Join AB and AC.

Thus ABC is the required triangle.

To construct a triangle when two sides and an included angle are given.

Example: Construct a triangle ABC in which AB=5cm,BC=6cm and angle=60

Solution: First we draw a rough of Abc

Steps of Construction:

Step 1. Draw a line segment BC=6cm.

Step 2. Construct angle CBX=60

Step 3. Along BX,cut off BA=5cm.

Step 4. Join CA.

Thus,triangle ABC is required triangle.