Construction.
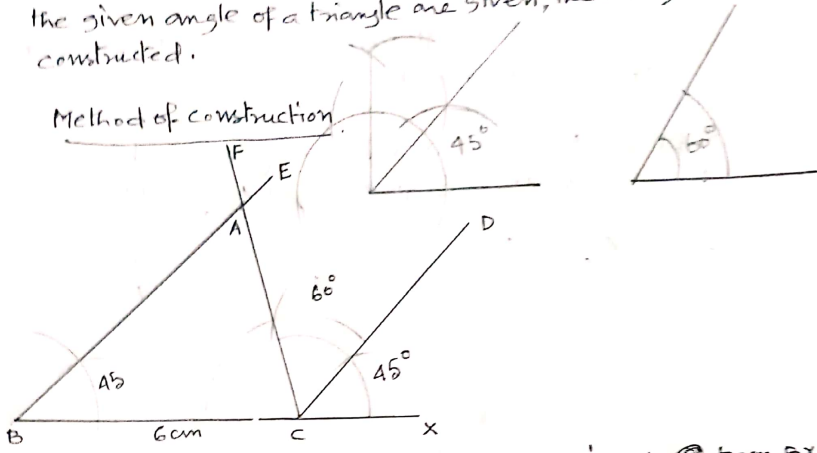
1. Two angles 45° and 60°, one side 6cm opposite to one of the given angle of a triangle are given, the triangle is to be constructed.
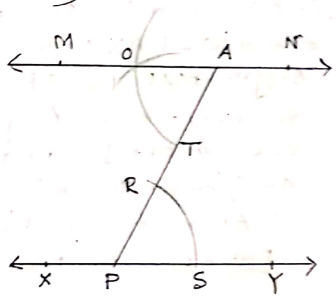
Method of construction.

A. Line segment BX is drawn and BC = 6cm is cut off from BX.

Now ∠CBE and ∠XCD both equal to 45° are constructed at B and C respectively. Taking CD as base, ∠DCF = 60° is constructed at C.

Now lines BE and CF intersect each other at A.

∴ ∆ABC is the required triangle.

2. Construction–2 Draw a line through a given pt, parallel to a given st. line.

Method of construction

Let P be any pt on XY, AP is joined. With P as centre and taking any convenient radius, an arc is drawn which cuts PY at S and PA at R.
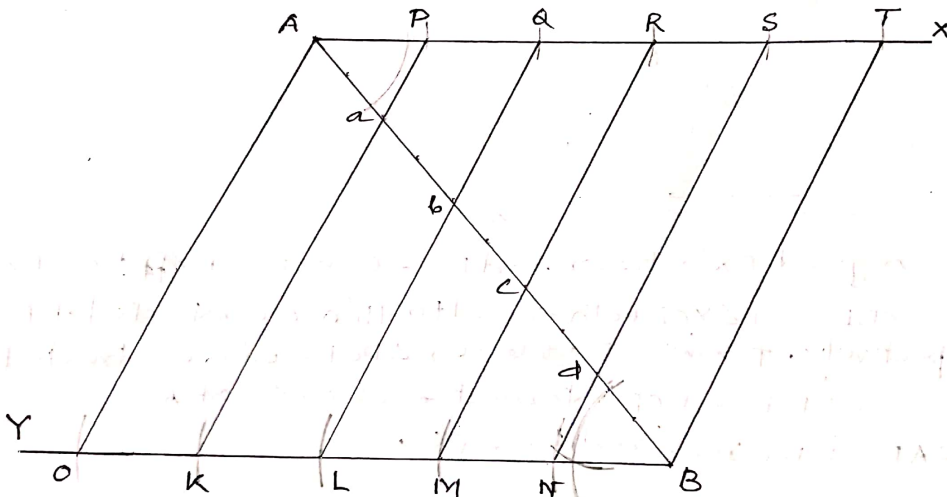
Similarly taking A as centre and same radius as in above, an arc is drawn which cuts PA at T.

Now again T as centre and RS as radius, another arc is drawn which cuts the previous arc at O.

OA is joined and produced in both direction to M and N ∴ MN is the required line ‖ to XY.

SN·3 Construction-3

To divide a given line segment into a number of equal segment.

Suppose AB is a given line segment. It is required to divide AB into five equal segments.

A   P   Q   R   S   T   X

a

b

c

d

Y

O   K   L   M   N   B

Method of construction:

$\angle BAX$ is constructed at the pt A. Now $\angle ABY$ is constructed equal to $\angle BAX$ on the opposite side of AB. Equal segments AP, PQ, QR, RS, ST are cut off from AX. Similarly equal segments BN, NM, ML, LK and KO = AP are cut off from BY. Now AO, PK, QL, RM, SN and TB are joined. They intersect AB at a, b, c, d respectively.

$\therefore$ AB is divided into 5 equal segments.

[If AB = 10cm, then Aa = ab = bc = cd = dB = 2cm.]