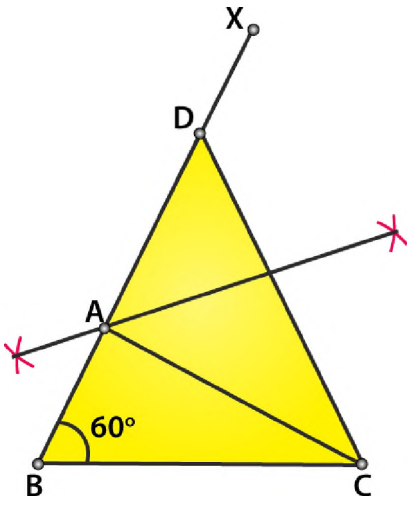
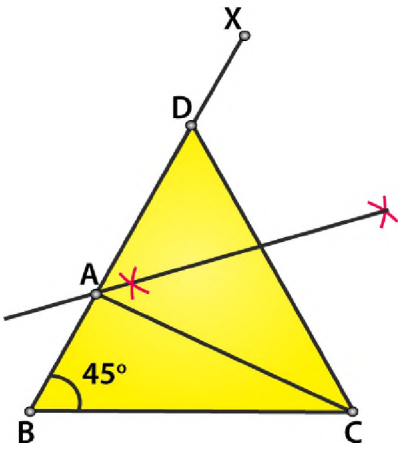
Exercise 17.3

Question 1: Construct a △ABC in which BC = 3.6 cm, AB + AC = 4.8 cm and ∠B = 60^0.
Solution:

Steps of Construction:
Step 1: Draw a line segment BC = 3.6 cm.
Step 2: At the point B, draw ∠XBC = 60^0.
Step 3: Draw an arc which intersects XB at point D form point B and with radius 4.8 cm
Step 4: Join DC.
Step 5: Draw a perpendicular bisector of DC which intersects DB at A.
Step 6: Join AC.
Hence, △ABC is the required triangle.



Question 2: Construct a △ABC in which AB + AC = 5.6 cm, BC = 4.5 cm and ∠B=45^0.
Solution:
Steps of Construction:
Step 1: Draw a line segment BC = 4.5 cm.
Step 2: At the point B, draw ∠XBC = 45^0.
Step 3: Draw an arc which intersects XB at point D form point B and with radius 5.6 cm
Step 4: Join DC.
Step 5: Draw a perpendicular bisector of DC which intersects DB at A.
Step 6: Join AC.
Hence, △ABC is the required triangle.



Question 3: Construct a △ABC in which BC = 3.4 cm, AB – AC = 1.5 cm and ∠B = 45^0.

Solution:

Steps of Construction:

Step 1: Draw a line segment BC = 3.4 cm.

Step 2: Draw ∠XBC = 45^0.

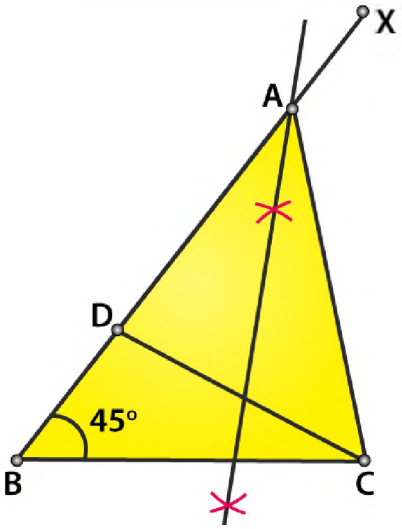
Step 3: Draw an arc which intersects XB at point D form point B and with radius 1.5 cm. So, BD = 1.5 cm.

Step 4: Join line segment DC.

Step 5: Draw a perpendicular bisector of DC which intersects BX at A.

Step 6: Join line segment AC.

Hence, △ABC is the required triangle.



Question 4: Using rulers and compasses only, construct a △ABC, given base BC = 7 cm, ∠ABC = 60^0 and AB + AC = 12 cm.

Solution:

Step 1: Draw a line segment BC = 7 cm.
Step 2: Draw an arc from point B cutting BC at N. (Choose any radius.)
Step 3: Keep compass at point N with same radius selected in step 2, cut the previous arc at M.
Step 4: Join line segment BM.
Step 5: Produce BM to any point P
Step 6: Cut BR = 12 cm, from BP.
Step 7: Join CR.
Step 8: Draw a perpendicular bisector of RC which intersects BR at A.
Step 9: Join line segment AC.
Hence, △ABC is the required triangle.