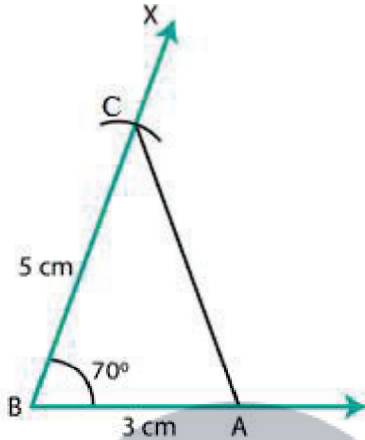


### EXERCISE 17.3

PAGE NO: 17.5

1. Draw  $\triangle ABC$  in which  $AB = 3$  cm,  $BC = 5$  cm and  $\angle B = 70^\circ$ .

Solution:

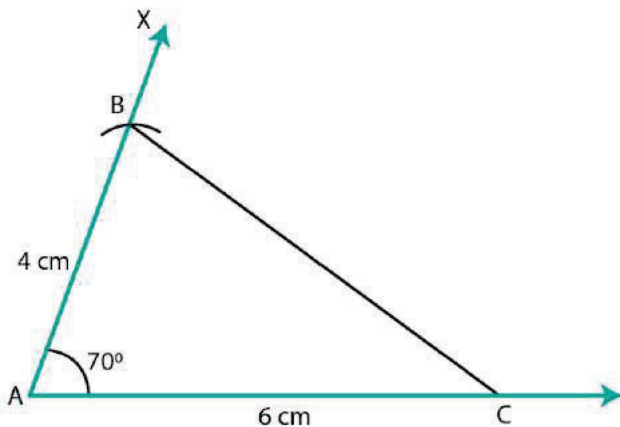


Steps of construction:

1. Draw a line segment  $AB$  of length 3 cm.
2. Draw  $\angle XBA = 70^\circ$ .
3. Cut an arc on  $BX$  at a distance of 5 cm at  $C$ .
4. Join  $AC$  to get the required triangle.

2. Draw  $\triangle ABC$  in which  $\angle A = 70^\circ$ ,  $AB = 4$  cm and  $AC = 6$  cm. Measure  $BC$ .

Solution:



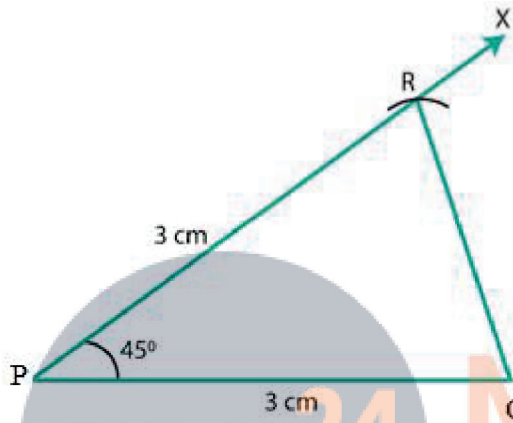
Steps of construction:

1. Draw a line segment  $AC$  of length 6 cm.

2. Draw  $\angle XAC = 70^\circ$ .
3. Cut an arc on AX at a distance of 4 cm at B.
4. Join BC to get the desired triangle.
5. We see that  $BC = 6$  cm.

**3. Draw an isosceles triangle in which each of the equal sides is of length 3 cm and the angle between them is  $45^\circ$ .**

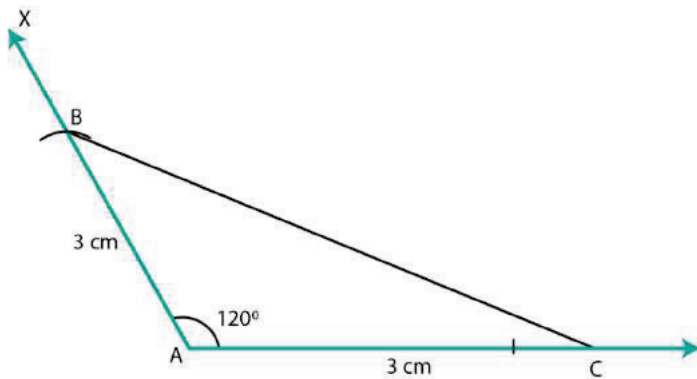
**Steps of construction:**



1. Draw a line segment PQ of length 3 cm.
2. Draw  $\angle QPX = 45^\circ$ .
3. Cut an arc on PX at a distance of 3 cm at R.
4. Join QR to get the required triangle.

**4. Draw  $\triangle ABC$  in which  $\angle A = 120^\circ$ ,  $AB = AC = 3$  cm. Measure  $\angle B$  and  $\angle C$ .**

**Solution:**



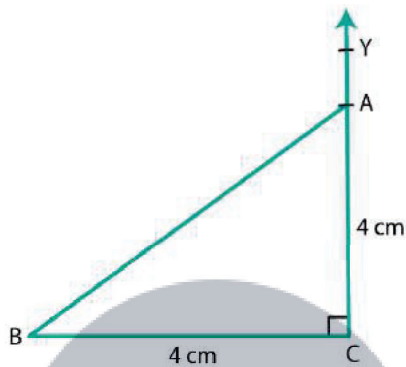
**Steps of construction:**

1. Draw a line segment AC of length 3 cm.

2. Draw  $\angle XAC = 120^\circ$ .
3. Cut an arc on AX at a distance of 3 cm at B.
4. Join BC to get the required triangle.
5. By measuring, we get  $\angle B = \angle C = 30^\circ$ .

5. Draw  $\triangle ABC$  in which  $\angle C = 90^\circ$  and  $AC = BC = 4$  cm.

Solution:

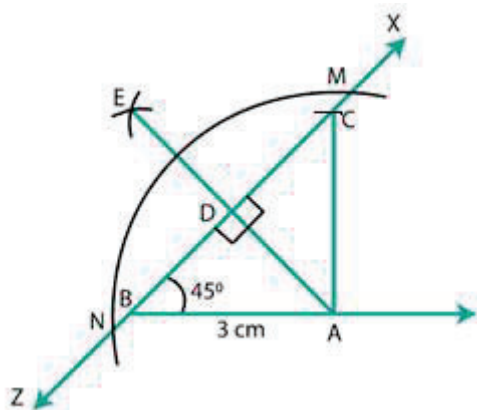


Steps of construction:

1. Draw a line segment BC of length 4 cm.
2. At C, draw  $\angle BCY = 90^\circ$ .
3. Cut an arc on CY at a distance of 4 cm at A.
4. Join AB. ABC is the required triangle.

6. Draw a triangle ABC in which  $BC = 4$  cm,  $AB = 3$  cm and  $\angle B = 45^\circ$ . Also, draw a perpendicular from A on BC.

Solution:

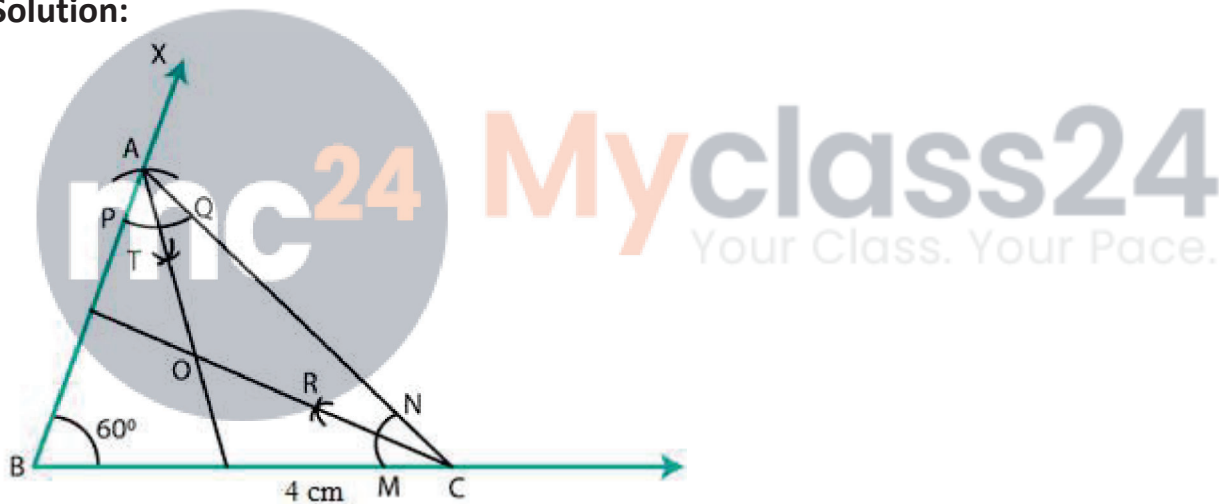


Steps of construction:

1. Draw a line segment AB of length 3 cm.
2. Draw an angle of  $45^\circ$  and cut an arc at this angle at a radius of 4 cm at C.
3. Join AC to get the required triangle.
4. With A as center, draw intersecting arcs at M and N.
5. With center M and radius more than half of MN, cut an arc on the opposite side of  $\angle A$ .
6. With N as center and same radius taken in the previous step, cut an arc intersecting the previous arc at E.
7. Join AE, it meets BC at D, then AE is the required perpendicular.

**7. Draw a triangle ABC with AB = 3 cm, BC = 4 cm and  $\angle B = 60^\circ$ . Also, draw the bisector of angles C and A of the triangle, meeting in a point O. Measure  $\angle COA$ .**

**Solution:**



Steps of construction:

1. Draw a line segment BC = 4 cm.
2. Draw  $\angle CBX = 60^\circ$ .
3. Draw an arc on BX at a radius of 3 cm cutting BX at A.
4. Join AC to get the required triangle.

Angle bisector for angle A:

5. With A as center, cut arcs of the same radius cutting AB and AC at P and Q, respectively.
6. From P and Q cut arcs of same radius intersecting at T.
7. Join AT to get the angle bisector of angle A.

Angle bisector for angle C:

8. With A as center, cut arcs of the same radius cutting CB and CA at M and N, respectively.
9. From M and N, cut arcs of the same radius intersecting at R
10. Join CR to get the angle bisector of angle C.
11. Mark the point of intersection of CR and AT as O.
12. Angle  $\angle COA = 120^\circ$ .

