

## Exercise 11.2

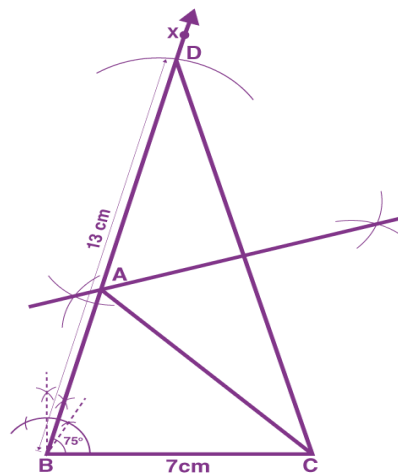
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**1. Construct a triangle ABC in which  $BC = 7\text{cm}$ ,  $\angle B = 75^\circ$  and  $AB+AC = 13\text{ cm}$ .**

### Construction Procedure:

The steps to draw the triangle of given measurement is as follows:

1. Draw a line segment of base  $BC = 7\text{ cm}$
2. Measure and draw  $\angle B = 75^\circ$  and draw the ray  $BX$
3. Take a compass and measure  $AB+AC = 13\text{ cm}$ .
4. With B as the centre, draw an arc at the point be D
5. Join DC
6. Now draw the perpendicular bisector of the line DC and the intersection point is taken as A.
7. Now join AC
8. Therefore, ABC is the required triangle.

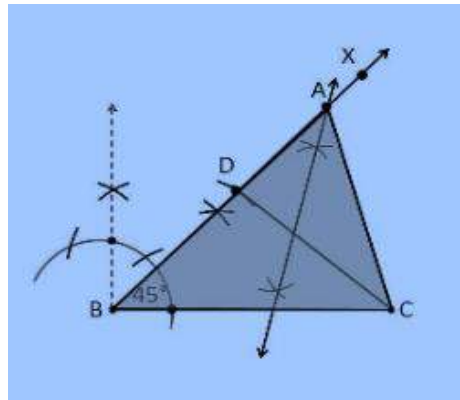


**2. Construct a triangle ABC in which  $BC = 8\text{cm}$ ,  $\angle B = 45^\circ$  and  $AB-AC = 3.5\text{ cm}$ .**

### Construction Procedure:

The steps to draw the triangle of given measurement is as follows:

1. Draw a line segment of base  $BC = 8\text{ cm}$
2. Measure and draw  $\angle B = 45^\circ$  and draw the ray  $BX$
3. Take a compass and measure  $AB-AC = 3.5\text{ cm}$ .
4. With B as centre and draw an arc at the point be D on the ray  $BX$
5. Join DC
6. Now draw the perpendicular bisector of the line CD and the intersection point is taken as A.
7. Now join AC
8. Therefore, ABC is the required triangle.

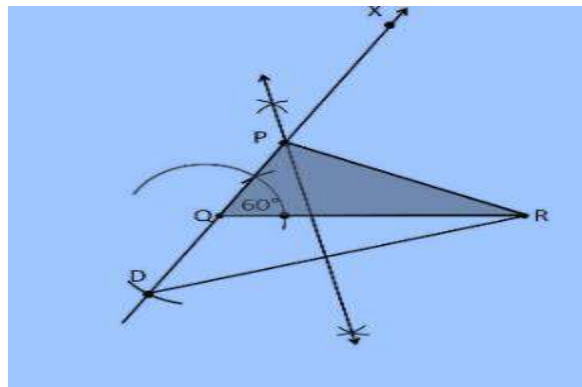


**3. Construct a triangle PQR in which  $QR = 6\text{cm}$ ,  $\angle Q = 60^\circ$  and  $PR - PQ = 2\text{cm}$ .**

**Construction Procedure:**

The steps to draw the triangle of given measurement is as follows:

1. Draw a line segment of base  $QR = 6\text{ cm}$
2. Measure and draw  $\angle Q = 60^\circ$  and let the ray be  $QX$
3. Take a compass and measure  $PR - PQ = 2\text{cm}$ .
4. Since  $PR - PQ$  is negative,  $QD$  will be below the line  $QR$ .
5. With  $Q$  as centre and draw an arc at the point be  $D$  on the ray  $QX$
6. Join  $DR$
7. Now draw the perpendicular bisector of the line  $DR$  and the intersection point is taken as  $P$ .
8. Now join  $PR$
9. Therefore,  $PQR$  is the required triangle.



**4. Construct a triangle XYZ in which  $\angle Y = 30^\circ$ ,  $\angle Z = 90^\circ$  and  $XY + YZ + ZX = 11\text{ cm}$ .**

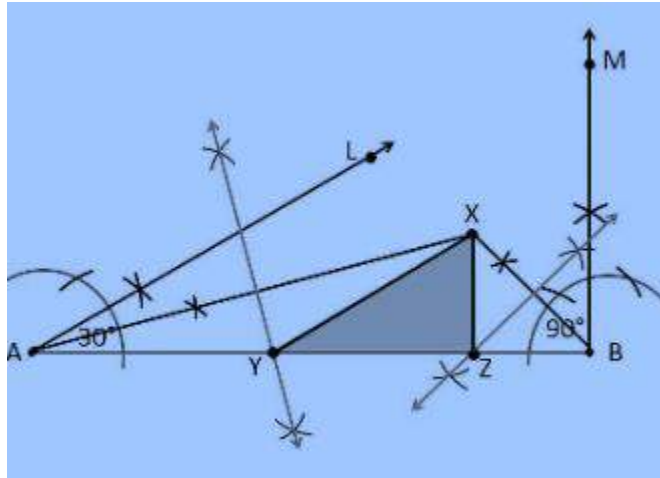
**Construction Procedure:**

The steps to draw the triangle of given measurement is as follows:

1. Draw a line segment  $AB$  which is equal to  $XY + YZ + ZX = 11\text{ cm}$ .
2. Make an angle  $\angle LAB = 30^\circ$  from the point  $A$ .
3. Make an angle  $\angle MBA = 90^\circ$  from the point  $B$ .
4. Bisect  $\angle LAB$  and  $\angle MBA$  at the point  $X$ .
5. Now take the perpendicular bisector of the line  $XA$  and  $XB$  and the intersection point be  $Y$  and  $Z$

respectively.

6. Join XY and XZ
7. Therefore, XYZ is the required triangle



**5. Construct a right triangle whose base is 12cm and sum of its hypotenuse and other side is 18 cm.**

**Construction Procedure:**

The steps to draw the triangle of given measurement is as follows:

1. Draw a line segment of base  $BC = 12$  cm
2. Measure and draw  $\angle B = 90^\circ$  and draw the ray  $BX$
3. Take a compass and measure  $AB + AC = 18$  cm.
4. With B as centre and draw an arc at the point be D on the ray  $BX$
5. Join DC
6. Now draw the perpendicular bisector of the line CD and the intersection point is taken as A.
7. Now join AC
8. Therefore, ABC is the required triangle.

