

## EXERCISE 11.4

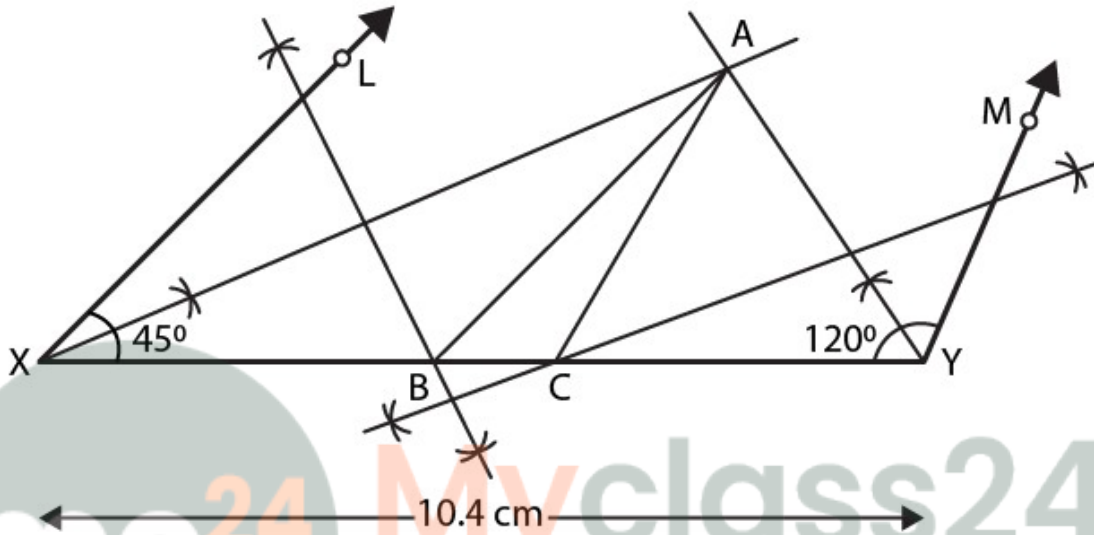
Construct each of the following and give justification:

1. A triangle if its perimeter is 10.4 cm and two angles are  $45^\circ$  and  $120^\circ$ .

**Solution:**

According to the question,

We have to construct a triangle if its perimeter is 10.4 cm and two angles are  $45^\circ$  and  $120^\circ$



Steps of construction:

1. Draw  $XY = 10.4$  cm.
2. Draw  $\angle LXY = 45^\circ$  and  $\angle MYX = 120^\circ$
3. Draw angle bisector of  $\angle LXY$ .
4. Draw angles bisector of  $\angle MYX$  such that it meets the angle bisector of  $\angle LXY$  at point A.
5. Draw the perpendicular bisector of AX such that it meets XY at B.
6. Draw the perpendicular bisector of AY such that it meets XY at C.
7. Join AB and AC.

Thus, ABC is the required triangle.

2. A triangle PQR given that  $QR = 3$ cm,  $\angle PQR = 45^\circ$  and  $QP - PR = 2$  cm.

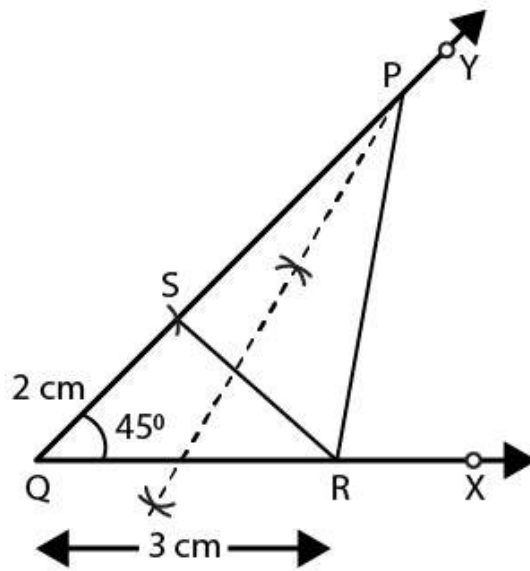
**Solution:**

According to the question,

We have to draw a triangle PQR such that  $QR = 3$ cm,  $\angle PQR = 45^\circ$  and  $QP - PR = 2$  cm

Steps of construction:

1. Draw a ray OX and cut off a line segment  $QR = 3$  cm.
2. AT Q, construction  $\angle YQR = 45^\circ$ .
3. From QY, cut off  $QS = 2$  cm.
4. Join RS.
5. Draw perpendicular bisector of RS to Meet QY at P.
6. Join PR. Then PQR is the required triangle.



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