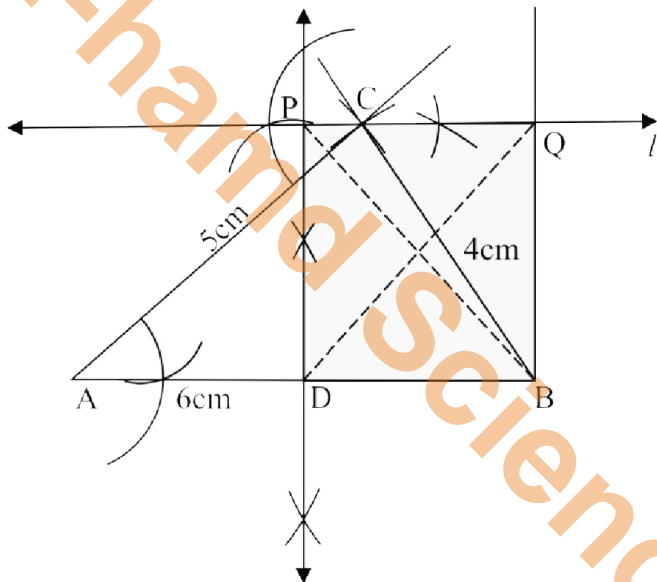


## Exercise 17.4

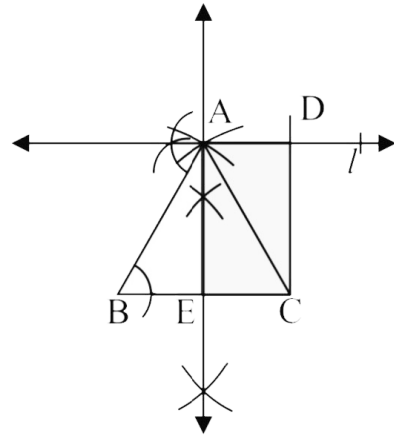
- Q.1** Construct a  $\Delta$  with sides 4cm, 5cm and 6cm and construct a rectangle having its area equal to that of the  $\Delta$  measure its diagonals. Are they equal



### Construction:

- Draw a line segment  $\overline{AB} = 6cm$ .
- Taking A as centre draw an arc of radius 5cm.
- Taking B as centre draw an arc of radius 4cm to cut at C. Join A to C and B to C.
- ABC is the required  $\Delta$ .
- Draw a line  $l$  through C parallel to  $\overline{AB}$ .
- Draw the  $\perp$  bisector of  $\overline{AB}$  in D and cutting the line at P.
- On the line  $l$ , cut  $\overline{PQ}$  equal to  $\overline{DB}$ .
- Join B to Q.
- PQBD is the required rectangle.
- The length of each diagonal measured to be 4.5cm.
- The length of each diagonal is same.

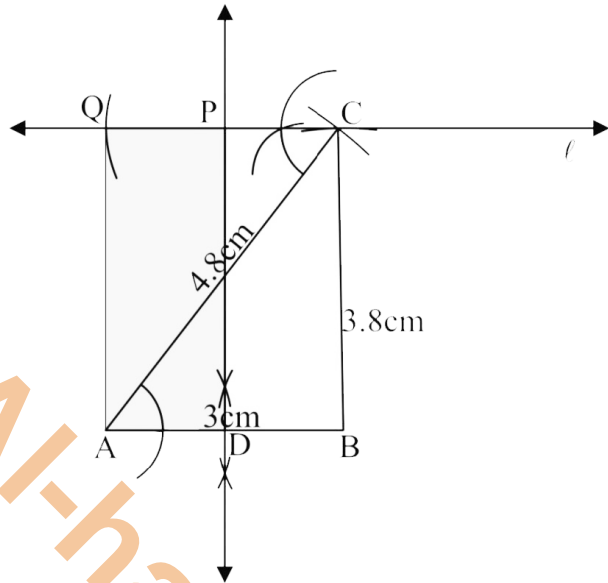
- Q.2** Transform an isosceles  $\Delta$  into a rectangle.



### Construction:

- Draw a line segment  $\overline{BC}$ .
- With B as centre draw an arc of suitable radius.
- With C as centre draw another arc of same radius which cuts the first arc at point A.
- Join A to B and A to C.
- $\Delta ABC$  is the isosceles  $\Delta$  with  $m\overline{AB} = m\overline{AC}$ .
- Draw the perpendicular bisector of  $\overline{BC}$  passing through point A.
- Through A draw a line  $l \parallel \overline{BC}$ .
- On  $l$  cut  $\overline{AD}$  equal to  $\overline{EC}$  and the Join C with D.
- CDAE is the required rectangle equal in area to  $\Delta ABC$ .

- Q.3** Construct a  $\Delta ABC$  such that  $m\overline{AB} = 3cm$ ,  $m\overline{BC} = 3.8cm$  and  $m\overline{AC} = 4.8cm$ . Construct a rectangle equal in area to the  $\Delta ABC$ , and measure its sides.



**Construction:**

- i. Draw a line segment  $\overline{AB} = 3\text{cm}$ .
- ii. Taking B as centre draw an arc of radius  $\overline{BC} = 3.8\text{cm}$ .
- iii. Taking A as centre draw an arc of radius  $\overline{AC} = 4.8\text{cm}$  to cut at C.
- iv. Join C to A and C to B.
- v. ABC is the required  $\Delta$ .
- vi. Through C draw a line  $l$  parallel  $\overline{AB}$ .
- vii. Draw the  $\perp$  bisector of  $\overline{AB}$  cutting the line  $l$  in P.
- viii. On  $l$  cut  $\overline{PQ} \cong \overline{DA}$ .
- ix. PQAD is the required rectangle  
 measure of sides of rectangle PQAD  
 $m\overline{PD} = 3.8\text{cm}$   $m\overline{AD} = 1.5\text{cm}$