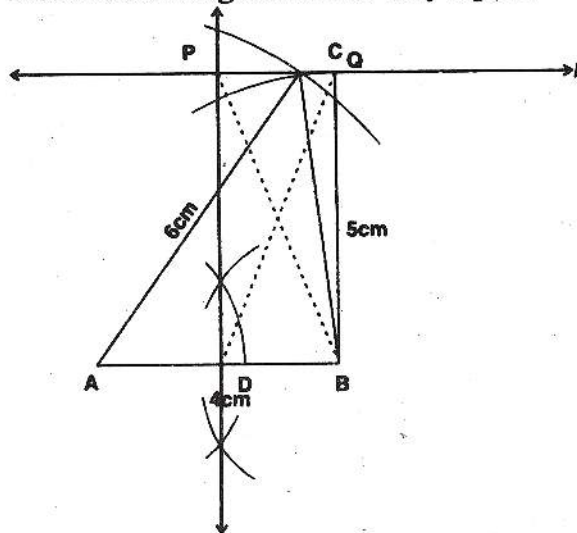


## Exercise 17.4

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



**Given**

4cm, 5cm, 6cm the sides of the triangle  $\Delta$ .

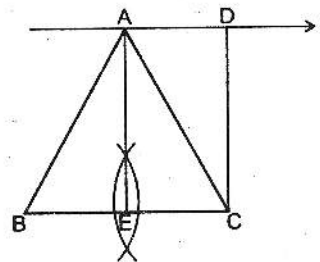
**Required**

To make a rectangle with area equal to that of the  $\Delta$ .

**Construction**

- Draw  $\overline{AB} = 4\text{cm}$ .
- Draw an arc of radius 5cm with centre B and an other arc of radius 6cm with centre A cutting the first in C.
- Join CA, CB
- ABC is the required  $\Delta$ .
- Draw a line  $\ell$  through C  $\parallel \overline{AB}$ .
- Draw the  $\perp$  bisector of  $\overline{AB}$  in D and cutting the line  $\ell$  at P.
- Draw  $BQ \perp$  on the line  $\ell$ .  
PQDB is the required rectangle.

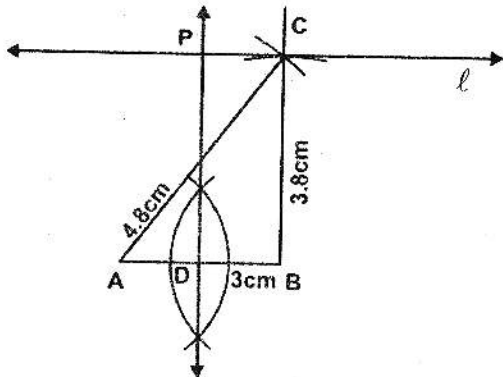
2. Transform an isosceles  $\Delta$  into a rectangle.



**Construction**

- (i) Take a line  $\overline{BC}$
  - (ii) Draw the  $\perp$  bisector of  $\overline{BC}$  take any point A on it.
  - (iii) Join AB and AC.
  - (iv)  $\triangle ABC$  is the isosceles  $\triangle$  with  $\overline{mAB} = \overline{mAC}$ .
  - (v) Through A draw a line  $\ell \parallel BC$ .
  - (vi) Draw  $\overline{CD} \perp \ell$
- CDAE is the required rectangle equal in area to  $\triangle ABC$

3. Construct a  $\triangle ABC$  such that  $\overline{mAB} = 3\text{cm}$ ,  $\overline{mBC} = 3.8\text{cm}$ ,  $\overline{mAC} = 4.8\text{cm}$ .  
Construct a rectangle equal in area to the  $\triangle ABC$ , and measure its sides.

**Given**

Three sides of the  $\triangle ABC$

**Required**

To construct a rectangle with area equal to that of the  $\triangle ABC$ .

**Construction**

- (i) Take  $\overline{mAB} = 3\text{cm}$
  - (ii) With B as centre draw an arc of radius  $3.8\text{cm}$ , with A as centre draw another arc of radius  $4.8\text{cm}$ , cutting the first in C.
  - (iii) Join B with C and A.
  - (iv)  $\triangle ABC$  is the required  $\triangle$ .
  - (v) Through C draw a line  $\ell \parallel \overline{AB}$ .
  - (vi) Draw the  $\perp$  bisector of  $\overline{AB}$  cutting the line  $\ell$  in P.
  - (vii) PCDB is the required rectangle.
- Measures of sides of rectangle PCDB are;  
 $\overline{mPD} = 3.8\text{cm}$ ,  $\overline{mDB} = 1.5\text{cm}$