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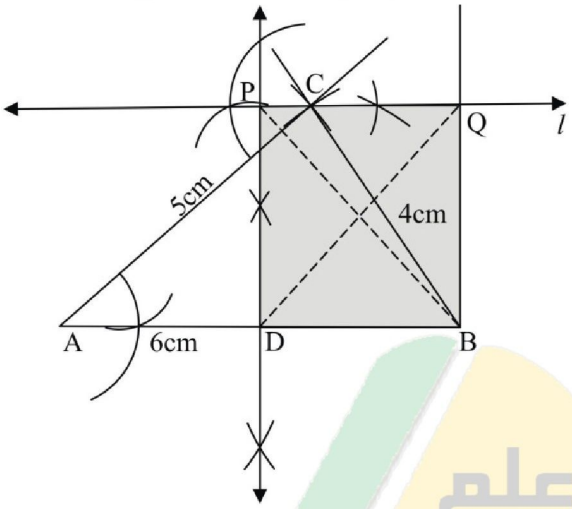
Exercise 17.4

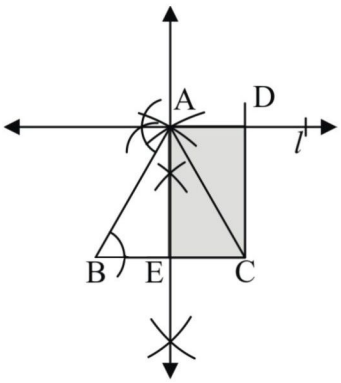
Q.1 Construct a Δ with sides 4cm, 5cm and 6cm and construct a rectangle having its area equal to that of the Δ measure its diagonals. Are they equal



Construction:

i. Draw a line segment $\overline{AB} = 6cm$.
ii. Taking A as centre draw an arc of radius 5cm.
iii. Taking B as centre draw an arc of radius 4cm to cut at C. Join A to C and B to C.
iv. ABC is the required Δ.
v. Draw a line l through C parallel to $\overline{AB}$.
vi. Draw the ⊥ bisector of $\overline{AB}$ in D and cutting the line at P.
vii. On the line l, cut $\overline{PQ}$ equal to $\overline{DB}$.
viii. Join B to Q.
ix. PQBD is the required rectangle.
x. The length of each diagonal measured to be 4.5cm.
xi. The length of each diagonal is same.

Q.2 Transform an isosceles Δ into a rectangle.



Construction:

i. Draw a line segment $\overline{BC}$.
ii. With B as centre draw in arc of suitable radius.
iii. With C as centre draw another are of same radius which cuts the first arc at point A.
iv. Join A to B and A to C.
v. ΔABC is the isosceles Δ with $m\overline{AB} = m\overline{AC}$.
vi. Draw the perpendicular bisector of $\overline{BC}$ passing through point A.
vii. Through A draw a line $l \parallel \overrightarrow{BC}$.
viii. On l cut $\overline{AD}$ equal to $\overline{EC}$ and the Join C with D.
ix. CDAE is the required rectangle equal in area to ΔABC.

Q.3 Construct a 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 ΔABC, and measure its sides.

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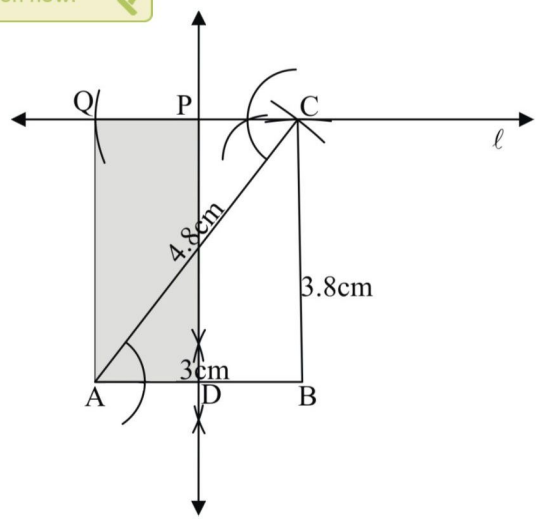

Construction:

i. Draw a line segment $\overline{AB} = 3cm$.

ii. Taking B as centre draw an arc of radius $\overline{BC} = 3.8cm$.

iii. Taking A as centre draw an arc of radius $\overline{AC} = 4.8cm$ to cut at C.

iv. Join C to A and C to B.

v. ABC is the requiredΔ.

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

$m\overline{PD} = 3.8\text{cm}$ $m\overline{AD} = 1.5\text{cm}$

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Report any mistake at freeilm786@gmail.com