

Question 1.

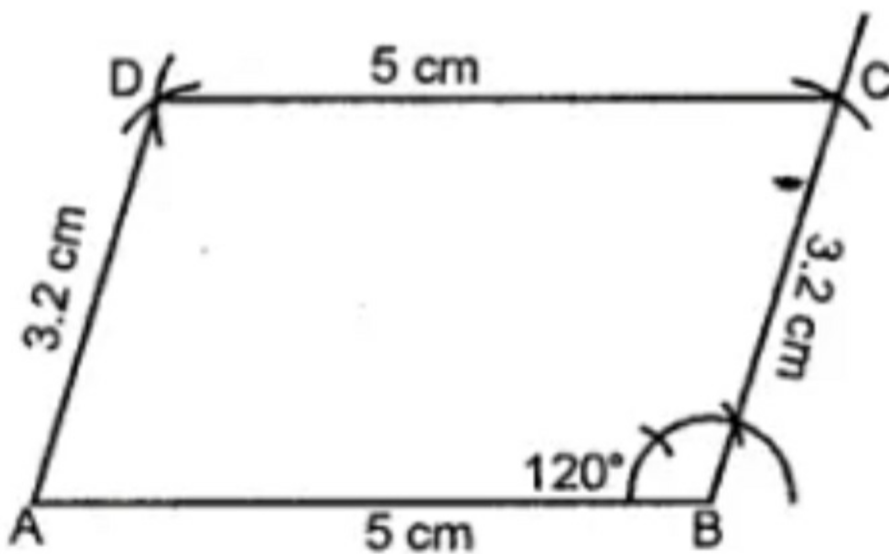
Construct a parallelogram ABCD such that $AB = 5$ cm, $BC = 3.2$ cm and $\angle B = 120^\circ$.

Solution:

Steps of construction :

- (i) Draw $AB = 5$ cm
- (ii) At B, Construct angle $= 120^\circ$
- (iii) With B as centre and 3.2 cm as radius cut off $\angle B$ at C.
- (iv) With C as centre and AB as radius draw an arc.
- (v) With A as centre and 3.2 cm as radius draw an arc which meets the previous arc at D.
- (vi) Join AD and CD.

Then ABCD is required parallelogram



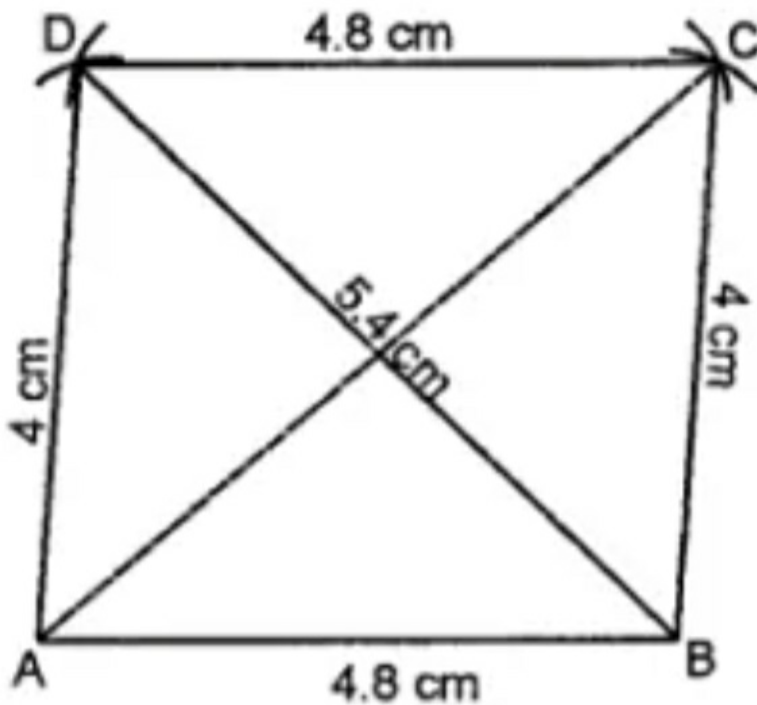
Question 2.

Construct a parallelogram ABCD such that $AB = 4.8$ cm, $BC = 4$ cm and diagonal $BD = 5.4$ cm.

Solution:

Steps of construction :

- (i) Construct a triangle ABD.
- (ii) With B as centre and 4 cm as radius draw an arc.
- (iii) With D as centre and 4.8 cm as radius, draw an arc which meets the previous arc at C.



- (iv) Join CD, BC and AC
- (v) Then ABCD is the required parallelogram.

Question 3.

Construct a parallelogram ABCD such that $BC = 4.5$ cm, $BD = 4$ cm and $AC = 5.6$ cm.

Solution:

Steps of construction :

(i) Construct a $\triangle BOC$ with $BC = 4.5$ cm,

$$BO = \frac{1}{2} \times 4 = 2 \text{ cm}$$

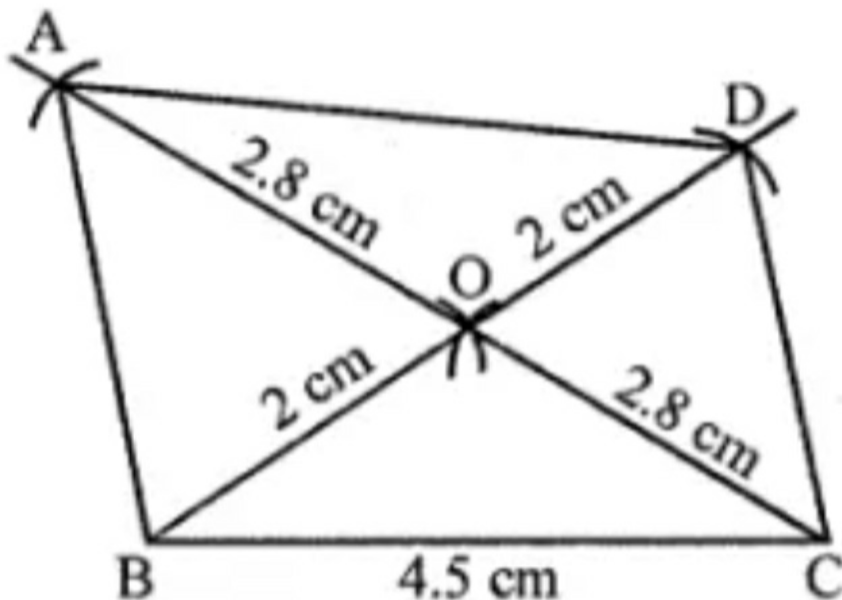
$$\text{and } OC = \frac{1}{2} AC = \frac{1}{2} \times 5.6 = 2.8 \text{ cm}$$

(\because Diagonals of ||gm bisect each other)

(ii) Produce OC to A such that $OC = OA$

(iii) Produce BO to D such that $OD = OB$.

(iv) Join AD, then ABCD is the required parallelogram.



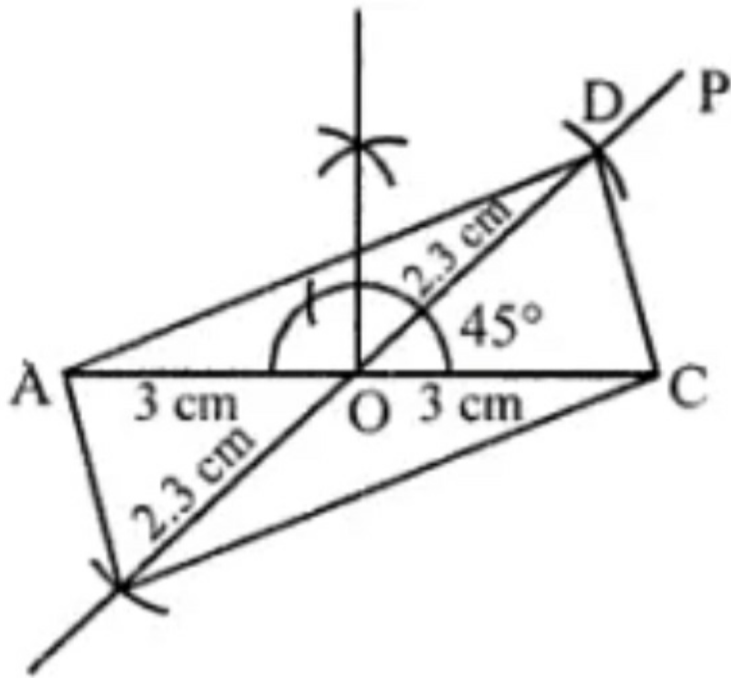
Question 4.

Construct a parallelogram ABCD such that $AC = 6$ cm, $BD = 4.6$ cm and angle between them is 45° .

Solution:

Steps of construction :

- (i) Draw $AO = \frac{1}{2} AC = 3$ cm and produce AO to C such that $OC = OA$.
- (ii) At O, construct $\angle COP = 45^\circ$.



- (iii) From OP, cut $OD = \frac{1}{2} BD = \frac{1}{2} \times 4.6$ cm = 2.3 cm.
- (iv) Produce OD to OB such that $OB = OD$.
- (v) Join AB, BC, CD and DA, then ABCD is the required to parallelogram.

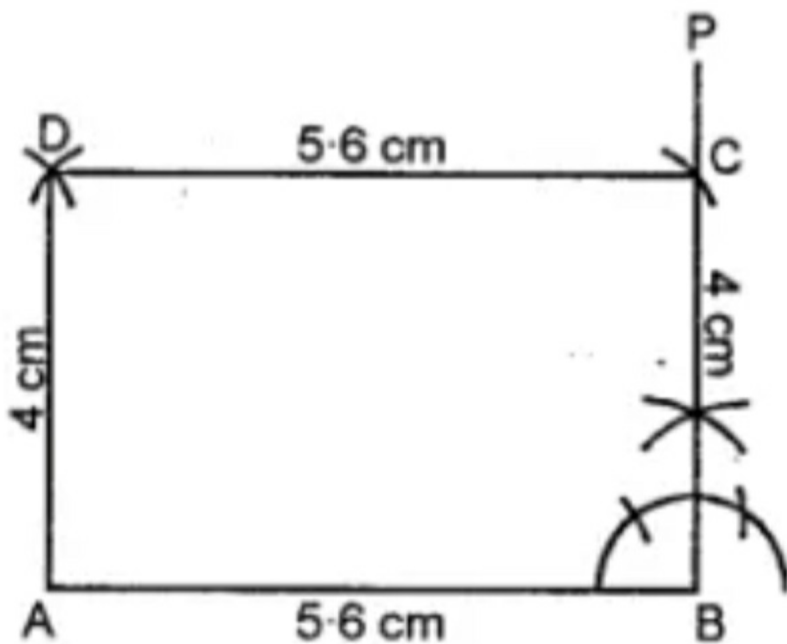
Question 5.

Construct a rectangle whose adjacent sides are 5.6 cm and 4 cm.

Solution:

Steps of construction :

- (i) Draw $AB = 5.6$ cm.
- (ii) At B, construct $\angle ABP = 90^\circ$
- (iii) From BP, cut off $BC = 4$ cm.



- (iv) With C as centre and radius = 5.6 cm draw an arc.
- (v) With A as centre and radius = 4 cm, draw an arc to meet the previous arc at D
- (vi) Join AD and CD. Then ABCD is the required rectangle.

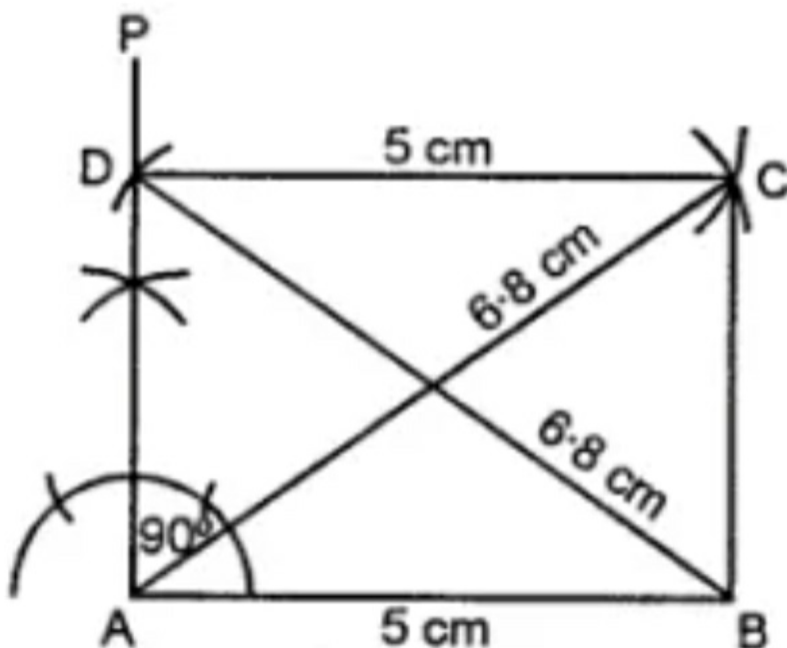
Question 6.

Construct a rectangle such that one side is 5 cm and one diagonal is 6.8 cm.

Solution:

Steps of construction :

- (i) Draw $AB = 5$ cm.
- (ii) At A, construct $\angle BAP = 90^\circ$.
- (iii) With B as centre and radius = 6.8 cm, draw an arc to meet AP at D.
- (iv) With A as centre and radius = 6.8 cm draw an arc.
- (v) With D as centre and radius = 5 cm, draw an arc to meet the previous arc at C.
- (vi) Join BC and CD. Then ABCD is the required rectangle.



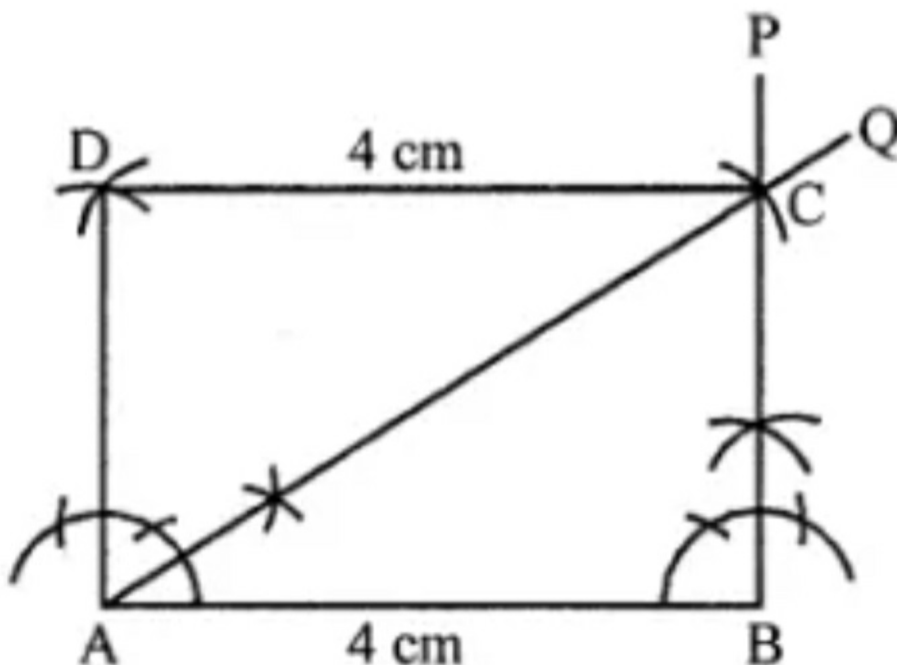
Question 7.

Construct a rectangle ABCD such that $AB = 4\text{ cm}$ and $\angle BAC = 60^\circ$.

Solution:

Steps of construction :

- (i) Draw $AB = 4\text{ cm}$.
- (ii) At B, draw $\angle ABP = 90^\circ$
- (iii) At A, construct $\angle BAQ = 30^\circ$. Let AQ meet BP at D
- (iv) With D as centre and radius = 4 cm draw an arc.
- (v) With A as centre and radius = BD, draw an arc to meet the previous arc at C.
- (vi) Join AC and CD. Then ABCD is the required rectangle.



Question 8.

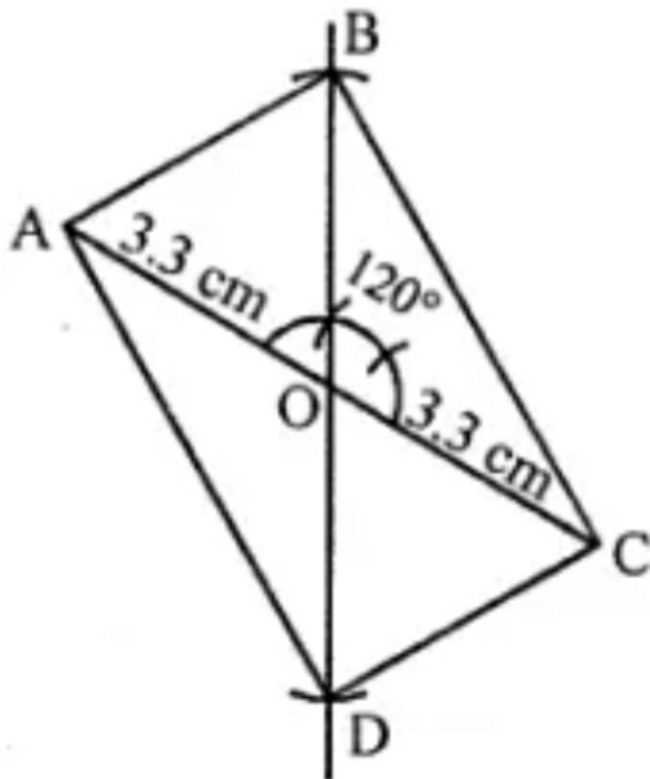
Construct a rectangle such that one diagonal is 6–6 cm and angle between two diagonals is 120° .

Solution:

Steps of construction :

- (i) Draw $AO = \frac{1}{2} AC = (\frac{1}{2} \times 6.6)$ cm and produce AO to C such that $OC = OA = 3.3$ cm
- (ii) At O, construct $\angle COB = 120^\circ$
- (iii) From OB, cut off $OB = \frac{1}{2} AC = 3.3$ cm.
- (iv) Produce BO to D such that $OB = OD = 3.3$ cm.
- (v) Join AB, BC, CD and DA.

Then ABCD is the required rectangle.



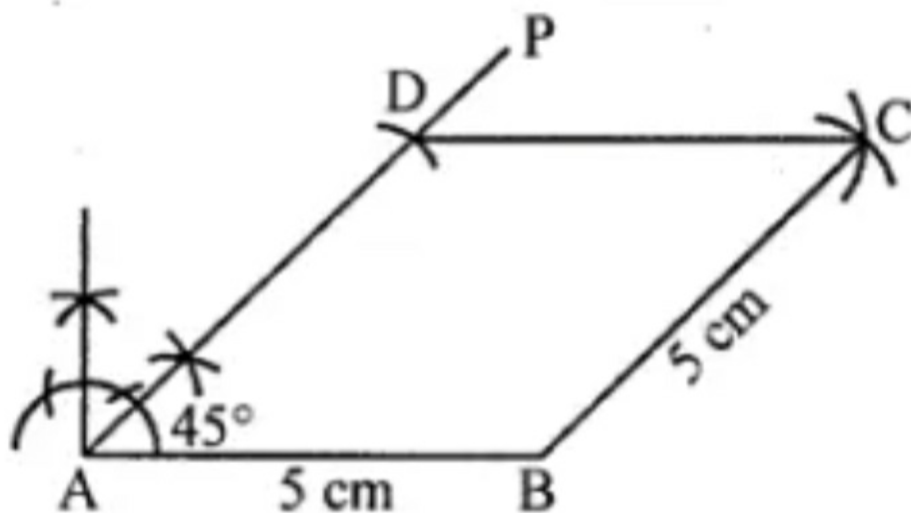
Question 9.

Construct a rhombus whose one side is 5 cm and one angle is 45°

Solution:

Steps of construction :

- (i) Draw $AB = 5$ cm.
- (ii) At A, construct $\angle BAP = 45^\circ$.
- (iii) From AP, cut off $AD = 5$ cm.
- (iv) With B as centre and radius = 5 cm, draw an arc.
- (v) With D as centre and radius = 5 cm, draw an arc to meet the previous arc at C.
- (vi) Join BC and CD. Then ABCD is the required rhombus.



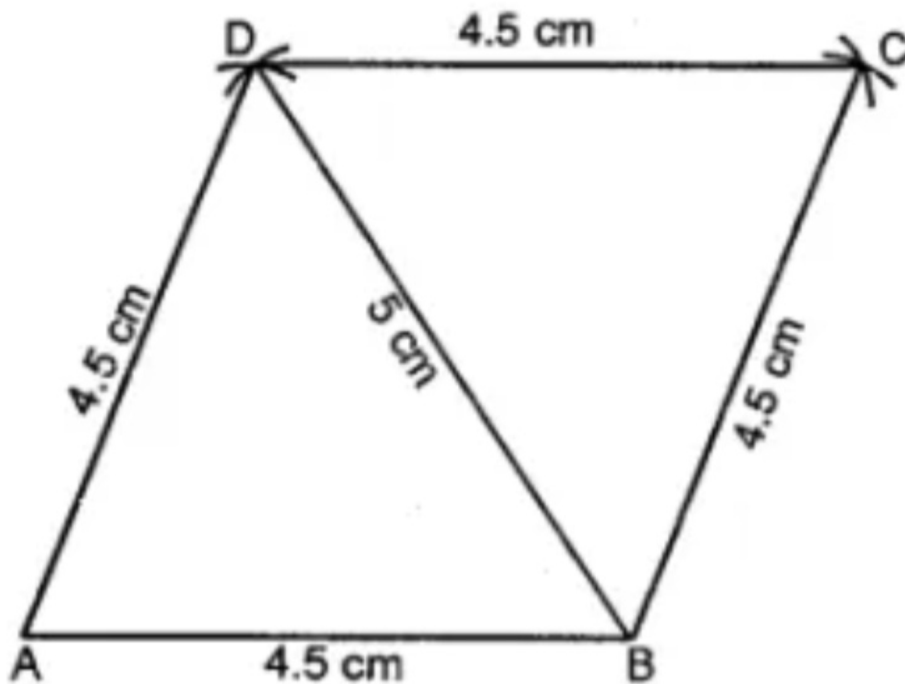
Question 10.

Construct a rhombus whose one side is 4.5 cm and one diagonal is 5 cm.

Solution:

Steps of construction :

- (i) Draw $AB = 4.5$ cm.
- (ii) With A as centre and radius = 4.5 cm, draw an arc.
- (iii) With B as centre and radius = 5 cm, draw an arc to meet the previous arc at D.



- (iv) With B as centre and radius = 4.5 cm, draw an arc.
- (v) With D as centre and radius = 4.5 cm, draw an arc to meet the previous arc at C.
- (vi) Join AD, BC and CD. Then ABCD is the required rhombus.

Question 11.

Construct a rhombus whose diagonals are 6.8 cm and 5.2 cm.

Solution:

Steps of construction :

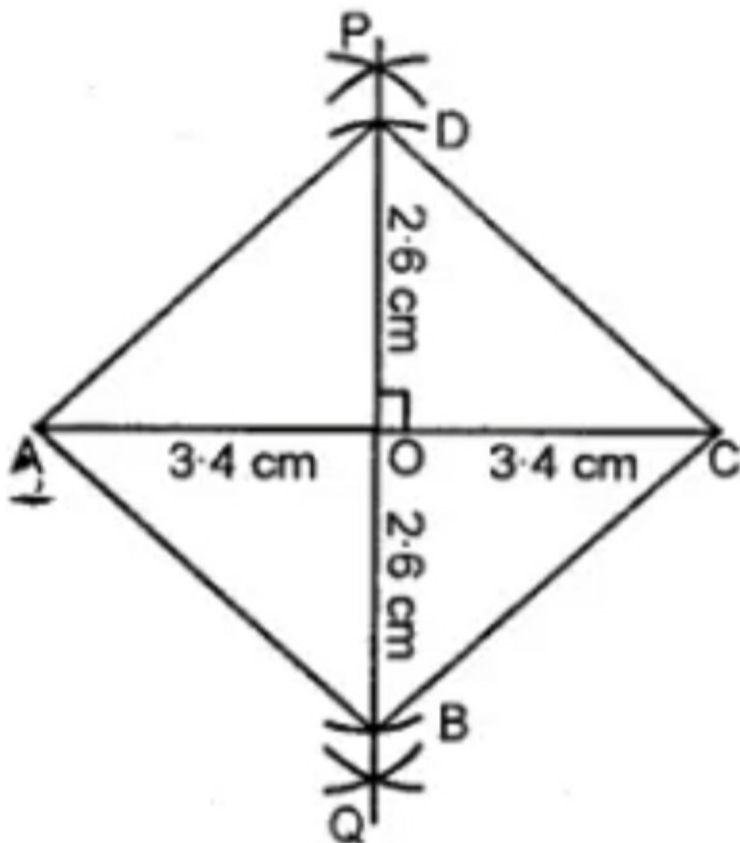
(i) Draw $AC = 6.8$ cm.

(ii) Draw 1 bisector PQ of AC to meet it at O .

(iii) From POQ , cut off OB and OD such that

$OB = OD = \frac{1}{2} BD = \frac{1}{2} (5.2) \text{ cm} = 2.6 \text{ cm}$.

(iv) Join AB , BC , CD and DA . Then $ABCD$ is the required rhombus.



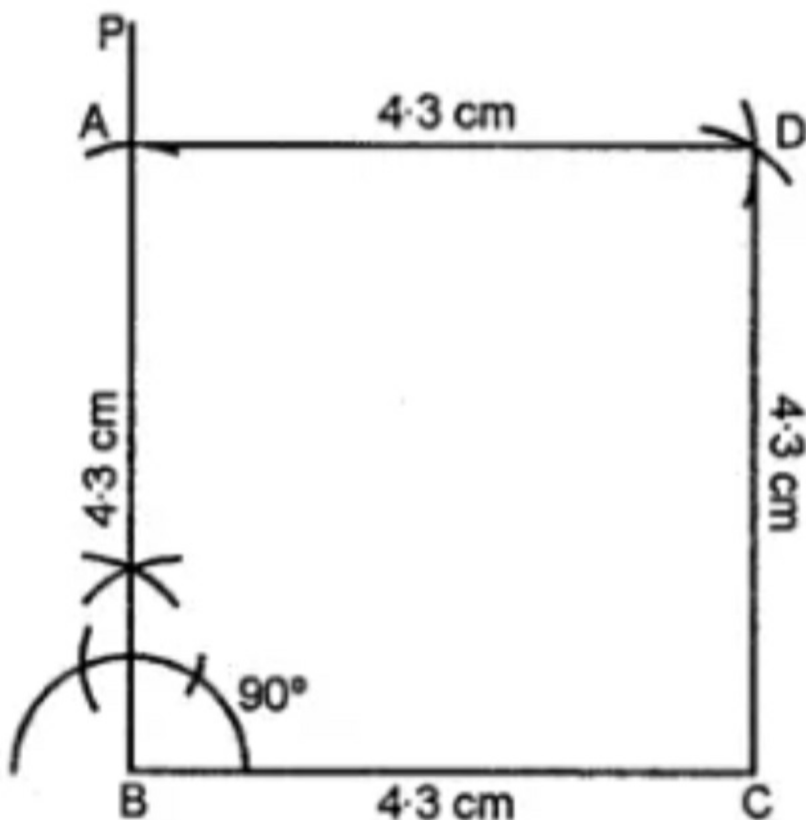
Question 12.

Construct a square whose one side is 4.3 cm.

Solution:

Steps of construction :

- (i) Draw $BC = 4.3$ cm.
- (ii) At B, construct $\angle CBP = 90^\circ$
- (iii) From BP, cut off $BA = 4.3$ cm.
- (iv) With C as centre and radius = 4.3 cm, draw an arc.
- (v) With A as centre and radius = 4.3 cm, draw an arc to meet the previous arc at D.
- (vi) Join AD and CD. Then ABCD is the required square.



Question 13.

Construct a square whose one diagonal is 6.2 cm.

Solution:

Steps of construction :

- (i) Draw $AC = 6.2$ cm.
- (ii) Draw \perp bisector PQ of AC to meet it at O .
- (iii) From POQ , cut off $OB = OD = \frac{1}{2} AC = 3.1$ cm.
- (iv) Join AB, BC, CD and DA .

Then $ABCD$ is the required square.

