

Construction of Quadrilaterals

- Q1)** Construct a quadrilateral PQRS in which $PQ = 3\text{ cm}$, $QR = 4\text{ cm}$, Angle $P = 120^\circ$, Angle $R = 90^\circ$ and Angle $S = 70^\circ$. (4 Marks)
- Q2)** Construct a parallelogram ABCD in which the adjacent sides are 7 cm and 3 cm and one angle is 50° . (4 Marks)
- Q3)** In a trapezium ABCD, $AB = 7\text{ cm}$, $BC = 4\text{ cm}$, $CD = 6\text{ cm}$, Angle $B = 70^\circ$ and $DC \parallel AB$. (4 Marks)
- Draw a rough sketch of the trapezium ABCD and write all known measurements on it.
 - What is the size of Angle C?
 - Construct the trapezium ABCD.
- Q4)** In a rhombus PQRS, each side is 5 cm and Angle $P = 60^\circ$. (4 Marks)
- Draw a rough sketch of this rhombus and write on it all the lengths and angles you know.
 - What is the size of Angle Q?
 - Draw one side PQ of this rhombus and complete the construction of the rhombus PQRS.
- Q5)** Construct a quadrilateral ABCD in which $AB = 4.5\text{ cm}$, $BC = 5\text{ cm}$, $CD = 4\text{ cm}$, $DA = 3.5\text{ cm}$ and Angle $B = 120^\circ$. (4 Marks)
- Q6)** Construct a square in which each side is 4.5 cm. (4 Marks)
- Q7)** Construct a parallelogram PQRS in which the diagonal $PR = 7.8\text{ cm}$, the diagonal $QS = 6.4\text{ cm}$ and the acute angle between these diagonal is 50° . (4 Marks)
- Q8)** Construct a parallelogram ABCD in which $AC = 6.6\text{ cm}$, $BD = 5.4\text{ cm}$, and $AB = 4\text{ cm}$. (4 Marks)
- Q9)** Construct a trapezium ABCD in which $AB = 6\text{ cm}$, $DA = 4\text{ cm}$, Angle $A = 100^\circ$, Angle $B = 100^\circ$ and $AB \parallel CD$. (4 Marks)

- Q10)** Construct a quadrilateral ABCD in which $AB = 5$ cm, $BC = 3$ cm, $CD = 6$ cm, $DA = 4$ cm and $AC = 7$ cm. (4 Marks)
- Q11)** In a rhombus ABCD, the diagonal $AC = 8$ cm and diagonal $BD = 6$ cm. (4 Marks)
- Draw a rough sketch of this rhombus and mark all the lengths and angles you know.
 - If AC and BD intersect at O, what is the measure of Angle AOD?
 - What are the lengths of AO and BO?
 - Draw the diagonal AC and construct its perpendicular bisector?
 - Complete the construction of rhombus ABCD.
- Q12)** Construct a rectangle whose length is 7 cm and breadth is 5 cm. (4 Marks)
- Q13)** Construct a quadrilateral ABCD in which $AB = 4$ cm, $BC = 5$ cm, Angle A = 120° , Angle B = 90° and Angle C = 80° . (4 Marks)
- Q14)** Construct a quadrilateral ABCD in which $AB = 3.5$ cm, $BC = 3$ cm, $AD = 4$ cm, Angle A = 110° and Angle B = 120° . (4 Marks)
- Q15)** Construct a parallelogram in which one diagonal is 8 cm, the other is 6 cm and the angle between them is 40° . (4 Marks)
- Q16)** Construct a rhombus ABCD whose side is 5 cm and one of the angles is 75° . (4 Marks)
- Q17)** Construct a rectangle ABCD in which $AB = 6.5$ cm and $BC = 4$ cm. (4 Marks)
- Q18)** Construct a quadrilateral PQRS in which $PQ = 5$ cm, $QR = 4.5$ cm, $RS = 4$ cm, $SP = 4.8$ cm, and Angle S = 70° . (4 Marks)
- Q19)** In the parallelogram ABCD, $AB = 5$ cm, $BC = 4$ cm and Angle A = 50° . (4 Marks)
- Draw a rough sketch of this parallelogram and from the data given, write down as many measurements as you can on it.
 - What are the measurements of sides AD and CD?
 - What are the sizes of Angle B, Angle C and Angle D?

Q20) Construct a quadrilateral ABCD with $AB = 3.5$ cm, $BC = 6.5$ cm,
 $A = 60^\circ$, $B = 105^\circ$ and $D = 75^\circ$.

(4 Marks)



Answers

- Q1)**
- Draw $PQ = 3$ cm.
 - Draw $\angle XPQ = 120^\circ$, $\angle RQP = 80^\circ$ such that $RQ = 4$ cm.
 - Draw an angle of 80° at R.
- PQRS is required quadrilateral.

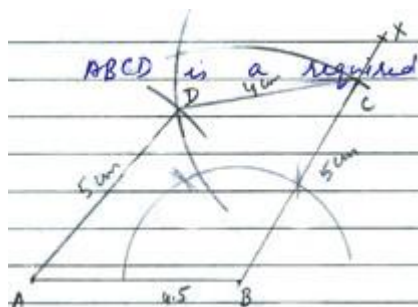


- Draw $AB = 7$ cm and draw $\angle XBA = 50^\circ$
 - Mark C on BX so that $BC = 3$ c.m.
 - Draw two axes of radius 7 cm and 3 cm respectively from the point C and A, intersecting at D.
- ABCD is the required parallelogram.

- Q3)**
- Draw $AB = 7$ cm and draw $\angle XBA = 70^\circ$
 - Mark $BC = 4$ cm on XB.
 - Draw angle $\angle DCB = 110^\circ$ such that $CD = 6$ cm.
- ABCD is required trapezium.

- Q4)**
- Draw $PQ = 5$ cm.
 - Draw $\angle XPQ = 60^\circ$, $\angle YQP = 120^\circ$
 - Mark $PS = 5$ cm on PX and $QR = 5$ cm on QY.
- PQRS is required rhombus.

Q5)

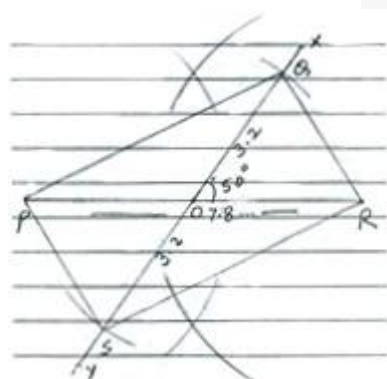


1. Draw $AB = 4.5$ cm. Draw $\angle XBA = 120^\circ$
 2. Mark $BC = 5$ cm on BX .
 3. With C and A as centre mark two arcs of radius 4 cm and 5 cm respectively intersecting at D .
- $ABCD$ is required quadrilateral.

Q6)

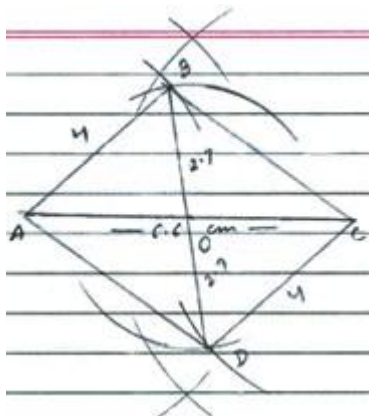
- a. Draw $AB = 4.5$ cm.
 - b. Draw $\angle XAB = \angle YBA = 90^\circ$
 - c. Mark $AD = BC = 4.5$ cm at AX, BY respectively.
- $ABCD$ is required square.

Q7)



1. Draw $PR = 7.8$ cm and make its mid point O .
2. Draw $\angle XOR = 50^\circ$ and extend OX Downward upto Y .
3. Measure $OQ, OR = 3.2$ cm on OX and OY respectively.
4. $PQRS$ is required $\parallel^{\text{gram}}$

Q8)

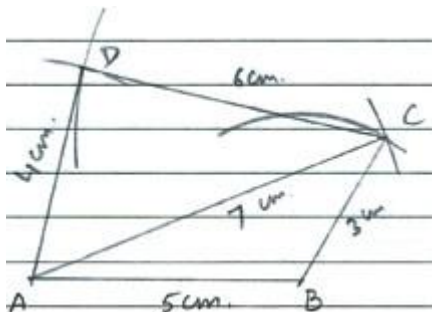


1. Draw $AC = 6.6$ cm and mark its with point O with the help of compass.
2. With O as centre mark two arcs of radius $= 5.4/2 = 2.7$ cm on both sides of AC .
3. With A and C as centre make two arcs of radius 4 cm intersecting arcs of step 2 at point B and D respectively.
4. $ABCD$ is required $\parallel^{\text{gram}}$

Q9)

- a. Draw $AB = 6$ cm.
 - b. Draw $\angle DAB = \angle XBA = 100^\circ$ such that $DA = 4$ cm.
 - c. At D draw an angle of $80^\circ = \angle CDA$ intersecting XB at C .
- $ABCD$ is required trapezium.

Q10)



1. Draw a $\triangle ABC$ with $AB = 5$ cm, $BC = 3$ c.m., $AC = 7$ cm
 2. With C and A as centre draw two arcs of radius 6 cm and 4 cm intersecting at D .
- $ABCD$ is required quadrilateral.

Q11) a. Draw $AC = 7$ cm and draw its perpendicular bisector at O .

b. Mark $OB = OD = 3$ cm on this perpendicular bisector.

$ABCD$ is required rhombus.

$$\angle AOD = 90^\circ$$

Q12) a. Draw $AB = 7$ cm. Draw $\angle XAB, \angle YBA = 90^\circ$

b. Take $AD = BC = 5$ cm on AX and BY respectively.

$ABCD$ is required rectangle.

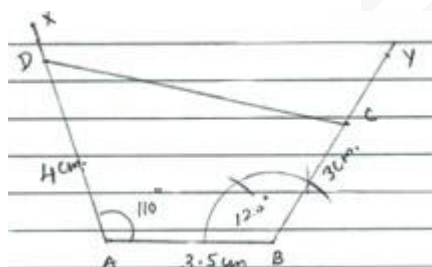
Q13) a. Draw $AB = 4$ cm.

b. Draw $\angle CBA = 90^\circ$ and $\angle XAB = 120^\circ$ such that $BC = 5$ cm.

c. Draw angle of 80° at C intersecting AX at D .

$ABCD$ is required quadrilateral.

Q14)



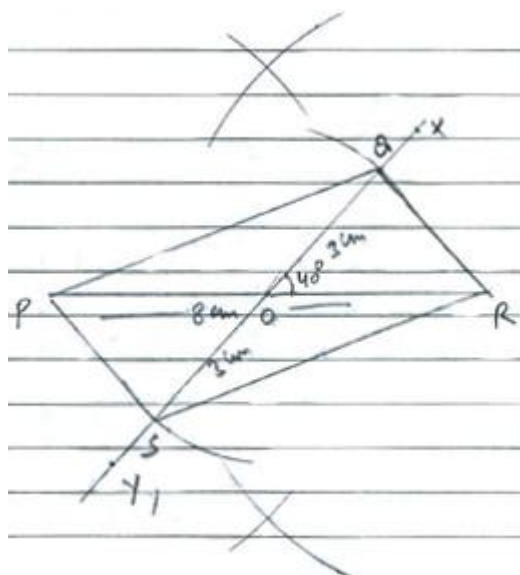
1. Draw $AB = 3.5$ cm.

2. Draw $\angle XAB = 110^\circ, \angle YBA = 120^\circ$.

3. Make $AD = 4$ cm on AX , $BC = 4$ cm on BY .

4. $PQRS$ is required II^{gram}

Q15)

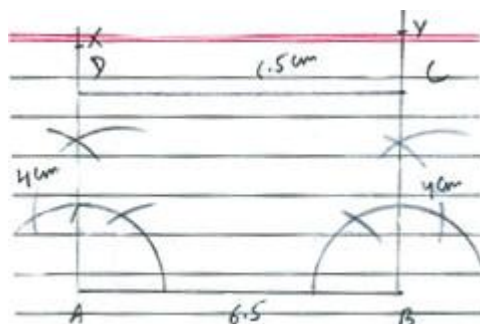


1. Draw $PR = 8$ cm and mark its with point O with the help of compass.
2. draw $\angle XOR = 45^\circ$ and extend XO downwards upto point Y .
3. Mark $OQ = OS = 3$ cm on OX and OY respectively.
4. $PQRS$ is required $\parallel^{\text{gram}}$

Q16)

1. Take $AB = 5$ cm. Draw $\angle XBA = 75^\circ$ and $\angle YAB = 105^\circ$.
2. Mark $BC = 5$ cm on BX and $AD = 5$ cm on AY .
3. $ABCD$ is required rhombus.

Q17)



- a. Draw $AB = 6.5$ cm and draw $\angle XAB = \angle YBA = 90^\circ$
- b. Mark $AD = 4$ cm on AX and $BC = 4$ cm on YB respectively

Q18) a. Draw $SR = 4$ cm. Draw angle $\angle PSR = 70^\circ$ with $SP = 4.8$ cm.

b. With P and R as centre draw two arcs of radius 5 cm and 4.5 cm intersecting at Q.

PQRS is required quadrilateral.

Q19) a. Draw $AB = 5$ cm.

b. Draw $\angle XAB = 50^\circ$ and $\angle YBA = 130^\circ$

c. Mark $BC = 4$ cm on BY.

d. Draw $C = 50^\circ$ intersecting AX at D.

ABCD is required parallelogram.

Q20)

$$\angle C = 360^\circ - (\angle A + \angle B + \angle D)$$

$$= 360^\circ - (60^\circ + 105^\circ + 75^\circ)$$

$$\angle C = 120^\circ$$

Steps

1. Draw $AB = 3.5$ cm
2. Draw angle of 60° at A and 105° at B.
3. Make angle of 120° at C intersecting angle of 60° at D.