



MATHS

BOOKS - RS AGGARWAL MATHS (HINGLISH)

CONSTRUCTION OF QUADRILATERALS

Example

1. Construct a parallelogram ABCD in which $AB=6\text{cm}$, $BC=4.5\text{ cm}$ and diagonal $AC=6.8\text{ cm}$.

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2. Construct a parallelogram one of whose sides is 5.2 cm and whose diagonals are 6 cm and 6.4 cm .

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3. Construct a quadrilateral ABCD in which $AB=3.8$ cm, $BC=3.4$ cm, $CD=4.5$ cm $AD=5$ cm and $\angle B = 80^\circ$

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4. Construct a parallelogram whose diagonals are 5.4 cm and 6.2 cm and an angle between them is 70° .

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5. Construct a rectangle ABCD in which side $BC=5$ cm and diagonal $BD=6.2$ cm.

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6. Construct a square ABCD each of whose diagonals is 5.2 cm.



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7. Construct a quadrilateral PQRS in which $PQ=5$ cm , $QR=6.5$ cm
 $\angle P = \angle R = 100^\circ$ and $\angle S = 75^\circ$



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8. Construct a quadrilateral ABCD in which $AB=4$ cm, $BC=5$ cm
 $AD=5.5$ cm and $\angle ABC = \angle ACD = 90^\circ$



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9. Construct a rhombus with side 4.2 cm and one of its angles equal to 65° .

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Exercise 17 A

1. Construct a quadrilateral ABCD in which $AB=4.2$ cm, $BC=6$ cm, $CD=5.2$ cm, $DA=5$ cm and $AC=8$ cm.

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2. Construct a quadrilateral PQRS in which $PQ=5.4$ cm, $QR=4.6$ cm, $RS=4.3$ cm, $SP=3.5$ cm and diagonal $PR=4$ cm.

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3. Construct a quadrilateral ABCD in which $AB=3.5$ cm, $BC=3.8$ cm, $CD=DA=4.5$ cm and diagonal $BD=5.6$ cm.

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4. Construct a quadrilateral ABCD in which $AB=3.6$ cm, $BC=3.3$ cm, $AD=2.7$ cm, diagonal $AC=4.6$ cm and diagonal $BD=4$ cm.

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5. Construct a quadrilateral PQRS in which $QR=7.5$ cm, $PR=PS=6$ cm, $RS=5$ cm and $QS=10$ cm. Measure the fourth side.

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6. Construct a quadrilateral ABCD in which $AB=3.4$ cm, $CD=3$ cm, $DA=5.7$ cm, $AC=8$ cm and $BD=4$ cm.

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7. Construct a quadrilateral $ABCD$ in which $AB=BC=3.5$ cm, $AD=CD=5.2$ cm and $\angle ABC = 120^\circ$



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8. Construct a quadrilateral $ABCD$ in which $AB=2.9$ cm, $BC=3.2$ cm, $CD=2.7$ cm, $DA=3.4$ cm and $\angle A = 70^\circ$



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9. Construct a quadrilateral $ABCD$ in which $AB = 3.5$ cm, $BC = 5$ cm, $CD = 4.6$ cm, $\angle B = 125^\circ$ and $\angle C = 60^\circ$



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10. Construct a quadrilateral PQRS in which $PQ=6\text{cm}$, $QR=5.6\text{ cm}$, $RS=2.7\text{ cm}$, $\angle Q = 45^\circ$ and $\angle R = 90^\circ$

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11. Construct a quadrilateral $ABCD$ in which $AB = 5.6\text{cm}$, $BC = 4\text{cm}$, $\angle A = 50^\circ$, $\angle B = 105^\circ$ and $\angle D = 80^\circ$

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Exercise 17 B

1. Construct a parallelogram ABCD in which $AB=5.2\text{ cm}$, $BC=4.7\text{ cm}$ and $AC=7.6\text{ cm}$.

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2. Construct a parallelogram ABCD in which $AB=4.3$ cm, $AD=4$ cm and $BD=6.8$ cm.

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3. Construct a parallelogram PQRS in which $QR=6$ cm, $PQ=4$ cm and $\angle PQR = 60^\circ$

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4. Construct a parallelogram $ABCD$ in which $BC = 5$ cm, $\angle BCD = 120^\circ$ and $CD = 4.5$ cm.

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5. Construct a parallelogram one of whose sides is 4.4cm and whose diagonals are 5.6cm and 7cm . Measure the other side.

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6. Construct a parallelogram ABCD in which $AB=6.5\text{cm}$, $AC=3.4\text{cm}$ and the altitude AL for A is 2.5cm. Draw the altitude from C and measure it.

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7. Construct a parallelogram ABCD $AC=3.8\text{cm}$, diagonal $BD=4.6\text{cm}$ and the angle between AC and BD is 60°

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8. Construct a rectangle ABCD whose adjacent sides are 11cm and 8.5cm.

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9. Construct a square each of whose sides measures 6.4cm.

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10. Construct a rectangle PQRS in which $QR=3.6\text{cm}$ and diagonal $PR=6\text{cm}$. Measure the other side of the rectangle.

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11. Construct a rhombus the lengths of whose diagonals are 6cm and 8cm.



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12. Construct a rhombus ABCD in which $AB=4\text{cm}$ and diagonal AC is 6.5cm .



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13. Construct a trapezium ABCD in which $AB=6\text{cm}$, $BC=4\text{cm}$,
 $CD=3.2\text{cm}$, $\angle B = 75^\circ$ and $DC \parallel AB$



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14. Draw a trapezium ABCD in which $AB \parallel DC$. $AB=7\text{cm}$, $BC=5\text{cm}$,
 $AD=6.5\text{cm}$ and $\angle B = 60^\circ$



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1. Define the terms: Open curve

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2. Define the terms: Closed curve

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3. Define the terms: Simple closed curve

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4. Angles of a quadrilateral are in the ratio 1:2:3:4 Find the measure of each angle.

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5. Two adjacent angles of a parallelogram are in the ratio 2:3. Find the measure of each of its angles.

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6. The sides of a rectangle are in the ratio 4:5 and its perimeter is 180cm. Find its sides,

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7. Prove that the diagonals of a rhombus bisect each other at right angles

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8. The diagonals of a rhombus are 16cm and 12cm. Find the length of each side of the rhombus.

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Test Paper 17 B

1. Two opposite angles of a parallelogram are $(3x - 2)^\circ$ and $(50 - x)^\circ$. The measures of all its angles are

- A. $97^\circ, 83^\circ, 97^\circ, 83^\circ$
- B. $37^\circ, 143^\circ, 37^\circ, 143^\circ$
- C. $76^\circ, 104^\circ, 76^\circ, 104^\circ$
- D. None of these

Answer: B

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2. The angles of quadrilateral are in the ratio 1 : 3 : 7 : 9 The measure of the largest angle is

A. 63°

B. 72°

C. 81°

D. None of these

Answer: D



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3. The length of a rectangle is 8cm and each of its diagonals measures 10cm. The breadth of the rectangle is

A. 5cm

B. 6cm

C. 7cm

D. 9cm

Answer:



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4. In a square PQRS if $PQ = (2x + 3)cm$ and $QR = (3x - 5)cm$ then

A. $x=4$

B. $x=5$

C. $x=6$

D. $x=8$

Answer:



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5. The bisectors of any two adjacent angles of a parallelogram intersect at

A. 30°

B. 45°

C. 60°

D. 90°

Answer: D



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6. How many diagonals are there in a hexagon?

A. 6

B. 8

C. 9

D. 10

Answer:



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7. Each interior angle of a polygon is 135° . How many sides does it have

A. 10

B. 8

C. 6

D. 5

Answer:

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Test Paper 17 C

1. For a convex polygon of n sides we have

Sum of all exterior angles.....

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2. For a convex polygon of n sides we have

Sum of all interior angles.....

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3. For a convex polygon of n sides we have

Number of diagonals.....



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4. For a regular polygon of n sides we have

Sum of all exterior angles.....

A. 180°

B. 270°

C. 360°

D. 540°

Answer: C



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5. For a regular polygon of n sides we have

Sum of all interior angles.....

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6. Each interior angle of a regular octagon is.....

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7. The sum of all interior angles of a regular hexagon is

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8. Each exterior angle of a regular polygon is 60° . This polygon is a.....sides.

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9. Each interior angle of a regular polygon is 108° . This polygon is a.....sides

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10. A pentagon has.....diagonals.

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Test Paper 17 D

1. The diagonals of a parallelogram are equal.

A. true

B. false

C. can not say anything

D. none of these

Answer: A



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2. Diagonals of a rectangle are perpendicular to each other.



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3. diagonals of a rhombus bisect each other at right angles.

A. true

B. false

C. can not say anything

D. none of these

Answer: A



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4. Every rhombus is a kite.

A. true

B. false

C. can not say anything

D. none of these

Answer: A



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1. Construct a quadrilateral PQRS in which $PQ=4.2\text{cm}$, $\angle PQR = 60^\circ$, $\angle QPS = 120^\circ$, $QR = 5\text{cm}$ and $PS=6\text{cm}$.



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