



MATHS

BOOKS - NAND LAL PUBLICATION

PRACTICAL GEOMETRY

Pg 60 Think Discuss And Write

1. We saw that 5 measurement of a quadrilateral can determine a quadrilateral uniquely. Do you think any five measurements of the quadrilateral can do this?



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2. Can you draw a parallelogram BATS where $BA = 5\text{ cm}$, $AT = 6\text{ cm}$ and $AS = 6.5\text{ cm}$? Why?



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3. Can you draw a rhombus ZEAL, where $ZE = 3.5\text{ cm}$, diagonal $EL = 5\text{ cm}$? Why?



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4. A student attempted to draw a quadrilateral PLAY where $PL = 3\text{ cm}$, $LA = 4\text{ cm}$, $AY = 4.5\text{ cm}$, $PY = 6\text{ cm}$, $LY = 6\text{ cm}$ but could not draw it. What is the reason?



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1. Find the area of the region in the first quadrant enclosed by x-axis, line $x = (\sqrt{3})y$ and the circle $x^2 + y^2 = 4$.



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2. Can you construct a quadrilateral PQRS with $PQ = 3\text{cm}$, $RS = 3\text{cm}$, $PS = 7.5\text{cm}$, $PR = 8\text{cm}$ and $SQ = 4\text{cm}$? Justify your answer.



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1. Can you construct the above quadrilateral (Fig. 4.18) MIST if we have 100° at M instead of 75° ?



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2. Can you construct the above quadrilateral PLAN if $PL = 6\text{cm}$, $LA = 9.5\text{ cm}$, $\angle P = 75^\circ = \angle L = 150^\circ$ and $\angle A = 140^\circ$.



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3. In a parallelogram, the length of adjacent sides are known. Do we still need measure of the angles to construct above?



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1. Construct the following quadrilaterals.

Quadrilateral ABCD

$AB = 4.5$ cm, $BC = 5.5$ cm, $CD = 4$ cm, $AD = 6$ cm, $AC = 7$ cm.

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2. Construct the following quadrilaterals :

Quadrilateral JUMP

$JU = 3.5$ cm

$UM = 4$ cm

$MP = 5$ cm.

$PJ = 4.5$ cm

$PU = 6.5$ cm.

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3. Construct the following quadrilaterals :

Parallelogram MORE

OR = 6 cm.

RE = 4.5 cm

EO = 7.5 cm.



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4. Construct the following quadrilaterals :

Rhombus BEST

BE = 4.5 cm

ET = 6 cm.



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1. Construct the following quadrilaterals :

Qadrilateral LIFT

LI = 4 cm

IF = 3 cm

TL = 2.5 cm

LF = 4.5 cm

IT = 4 cm.



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2. Quadrilateral GOLD

OL = 7.5 cm

GL = 6 cm.

GD = 6 cm

$LD = 5 \text{ cm}$

$OD = 10 \text{ cm}$.

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3. Construct the following quadrilateral : Rhombus BEND.

$BN = 5.6 \text{ cm}$

$DE = 6.5 \text{ cm}$.

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Exercise 4 3 Pg 64

1. Quadrilateral MORE

$MO = 6\text{cm}$, $OR = 4.5\text{cm}$, $\angle M = 60^\circ$, $\angle O = 105^\circ$, $\angle R = 105^\circ$.

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2. Quadrilateral PLAN

$$PL = 4\text{cm}, LA = 6.5\text{cm}, \angle P = 90^\circ, \angle A = 110^\circ, \angle N = 85^\circ.$$



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3. Parallelogram HEAR

$$HE = 5\text{cm}, EA = 6\text{cm}, \angle R = 85^\circ$$



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Exercise 4 4 Pg 67

1. Quadrilateral DEAR

$$DE = 4\text{ cm}, EA = 5\text{ cm}, AR = 4.5\text{ cm}, \angle E = 60^\circ, \angle A = 90^\circ.$$



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2. Quadrilateral TRUE

$TR = 3.5 \text{ cm}, RU = 3 \text{ cm}, UE = 4 \text{ cm}, \angle R = 75^\circ, \angle U = 120^\circ$.



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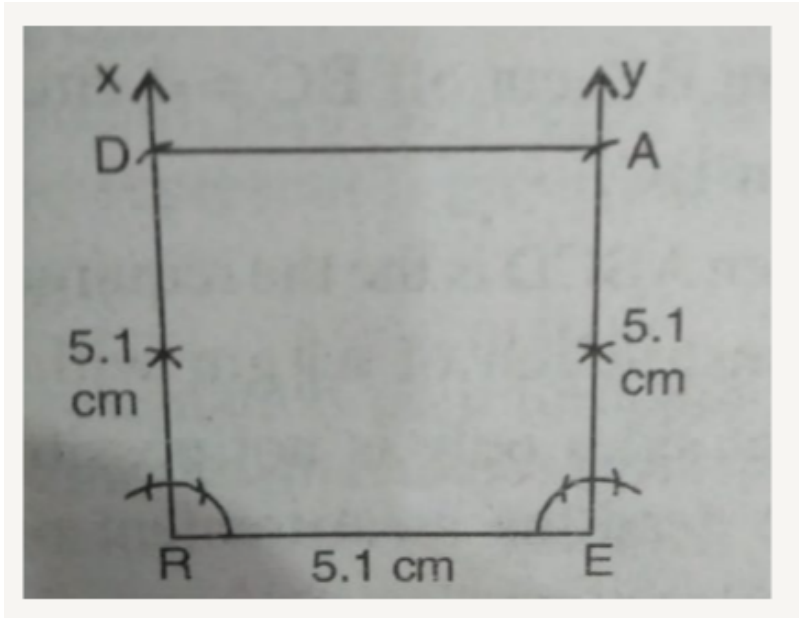
Exercise 4 5 Pg 68

1. Draw the following : The square READ with $RE = 5.1 \text{ cm}$.



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2. A rhombus whose diagonals are 5.2 cm and 6.4 cm along.

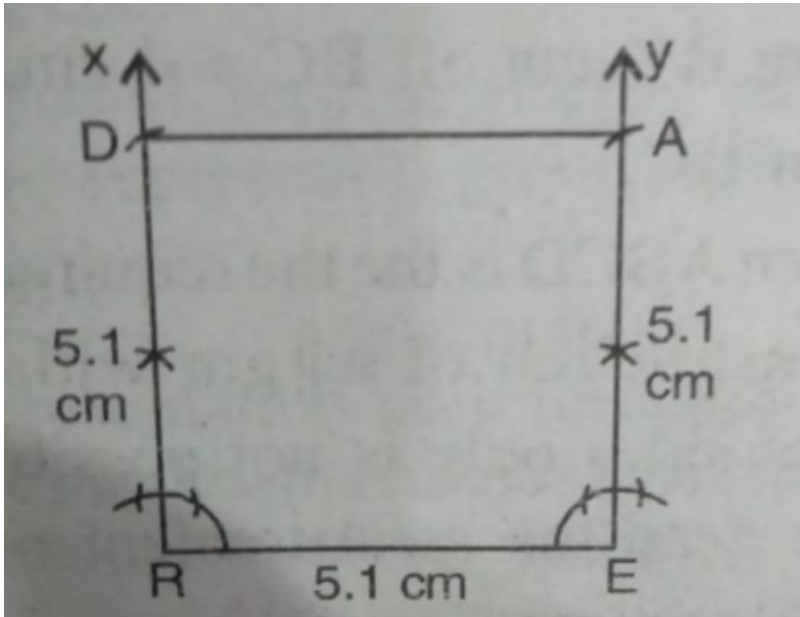


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3. Draw the following : A rectangle with adjacent sides of lengths 5 cm and 4 cm.

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4. A parallelogram OKAY where $OK = 5.5$ cm and $KA = 4.2$ cm



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Additional Questions For Practice Objective Type Questions

1. The condition in which unique rhombus cannot be constructed

a. one side and one angle is given

b. two diagonals are given

c. A side is given

A. one side and one angle is given

B. two diagonals are given

C. A side is given

D.

Answer: C



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2. A quadrilateral cannot be constructed uniquely if its _____ sides and _____ angles are given

A. 4, 1

B. 3, 1

C. 4, 2

D.

Answer: B



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3. Adjacent sides of different lengths but both pairs of opposite sides are equal and all angles are 90° .

A. Square

B. rectangle

C. rhombus

D.

Answer: B

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Additional Questions For Practice

1. State whether the following statement are True or False.

A quadrilateral is a polygon with 4 sides, 4 angles and 2 diagonals.

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2. State whether the following statement are True or False.

It is possible to construct quadrilateral PQRS in which $PQ = 4\text{cm}$, $QR = 5\text{cm}$ $\angle P = 105^\circ$, $\angle S = 75^\circ$.

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3. State whether the following statement are True or False.

Parallelogram can be constructed if two adjacent sides and included angle given.



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4. State whether the following statement are True or False.

If four angles and a side of a quadrilateral is given then quadrilateral cannot be construct uniquely.



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5. How many elements does a quadrilateral have? Name them.



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Additional Questions For Practice Short Answer Type Questions

1. While constructing the quadrilateral using measurements of five independent parts, which two conditions must be satisfied.



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2. Construct the following :

A rhombus whose diagonals are 5 cm and 3 cm.



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3. Construct the following :

A square whose diagonal is 3 cm

We know that : In a square.

length of diagonals are equal.

Diagonals are perpendicular bisectors.

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4. Construct the following :

Construct a parallelogram whose adjacent sides are 3.5 cm and 4 cm and the angle between them is 120° .

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Additional Questions For Practice Long Answer Type Questions

1. Construct quadrilateral PQRS in which $PQ = 4.5$ cm, $SP = 3$ cm, $QR = 4$ cm, $RS = 3$ cm and $QS = 4.2$ cm.

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2. Construct quadrilateral PQRS in which $PQ = 3.5$ cm, $QR = 2.6$ cm, $PR = 4.2$ cm, $QS = 5.4$ cm, $PS = 3.8$ cm.



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Additional Questions For Practice Hots Higher Order Thinking Skill

1. Can we construct a parallelogram with one side and one diagonal?



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[Sample Paper For Practice](#)

1. To construct a parallelogram uniquely it is sufficient to know that measure of

- A. Two opposite sides
- B. Two adjacent sides
- C. Two adjacent sides and one angle
- D.

Answer: C

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2. Minimum number of measurements required to construct a quadrilateral is

- A. 3

B. 4

C. 5

D.

Answer: C



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3. How many elements does a quadrilateral have? Name them.

A. 10

B. 8

C. 6

D.

Answer: A



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4. State whether True or False.

When each angle of the rhombus is 90° , it is a square.



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5. State whether True or False.

Rhombus can be constructed if its one side is known.



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6. State whether True or False.

It is possible to construct a convex quadrilateral with three angles and two diagonals

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7. Fill in the blanks.

To construct _____ at least five measurements are needed.

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8. Fill in the blanks.

We can construct quadrilateral with _____ diagonals and _____

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9. Fill in the blanks.

Minimum number of measurements required to construct a unique parallelogram is _____.

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10. How many measurements are required to construct a rectangle?

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11. Construct the following.

Construct a rhombus of side 4 cm and one of the acute angles is 30° .

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12. Construct the following.

Construct a rectangle whose adjacent sides are 4 cm and 2.5 cm.

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13. Construct a quadrilateral ABCD in which $AB = 5 \text{ cm}$, $BC = 3.5 \text{ cm}$, $AD = 4.2 \text{ cm}$, $\angle A = 90^\circ$, $\angle B = 60^\circ$.

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14. Construct a quadrilateral ABCD when $AB = 3.5 \text{ cm}$, $BC = 4 \text{ cm}$, $CD = 3.7 \text{ cm}$, $DA = 4.2 \text{ cm}$ and $\angle A = 120^\circ$.

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15. Construct a rectangle ABCD in which $AC = 5 \text{ cm}$, $\angle CAB = 30^\circ$.

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