

Understanding Quadrilaterals

- Q1)** Fill in the blank: (1 Mark)
In a parallelogram, the opposite sides are -----.
- Q2)** Fill in the blank: (1 Mark)
The sum of four angles of a quadrilateral is -----.
- Q3)** Fill in the blank: (1 Mark)
An isosceles trapezium is a trapezium in which the non-parallel sides are -----.
- Q4)** Fill in the blank: (1 Mark)
In a rhombus, all ----- are equal.
- Q5)** Fill in the blank: (1 Mark)
In a parallelogram, the sum of a pair of adjacent angles is -----.
- Q6)** Fill in the blank: (1 Mark)
In a rhombus, the diagonals bisect each other at -----.
- Q7)** Fill in the blank: (1 Mark)
Number of diagonals in any closed figure is -----.
- Q8)** Fill in the blank: (1 Mark)
A regular polygon contains ----- sides and angles.

Q9) Choose the correct answer: (1 Mark)

To construct a convex quadrilateral uniquely, it is necessary to know at least ----- of its sides.

- a) 1 side
- b) 2 sides
- c) 3 sides
- d) None of the above

Q10) Choose the correct answer: (1 Mark)

All the sides are equal and all the angles are 90° .

- a) Rectangle
- b) Rhombus
- c) Square
- d) Parallelogram

Q11) Choose the correct answer: (1 Mark)

A quadrilateral with two pairs of parallel sides is

- a) Trapezium
- b) Parallelogram
- c) Kite
- d) Square

Q12) Choose the correct answer: (2 Marks)

The angles of a quadrilateral are in the ratio 9:4:6:5. The angles are

- a) 135,600,900,750
- b) 120,750,800,850
- c) 145,500,900,750
- d) 135,600,800,850

- Q13)** Choose the correct answer: (1 Mark)
- The angles of a quadrilateral are in the ratio 1 : 2 : 3 : 4 what type of a quadrilateral is formed.
- a) Trapezium
 - b) Parallelogram
 - c) Rhombus
 - d) None of the above
- Q14)** If the sum of one pair of opposite angles of a parallelogram is 2000, find the angles of the parallelogram. (2 Marks)
- Q15)** If the sum of one pair of adjacent sides of a parallelogram is 32 cm, find its perimeter. (1 Mark)
- Q16)** The perimeter of a parallelogram is 100 cm. if one side is 10 cm longer than the other, find the sides of this parallelogram. (2 Marks)
- Q17)** If one angle of a parallelogram is 1100, find the other angels. (2 Marks)
- Q18)** What is the smallest number by which 3087 must be divided so that the quotient is a perfect cube? Find cube root of the perfect cube so formed. (3 Marks)
- Q19)** If the perimeter of a rhombus is 72 cm, what is the length of each its sides? (1 Mark)
- Q20)** If the side of a rhombus is 9 cm, what is its perimeter? (1 Mark)

Answers

Q1) Equal (or parallel)

Q2) 360°

Q3) Equal

Q4) Sides

Q5) 180°

Q6) Right angles

Q7) $\frac{n(n-3)}{2}$

Q8) Equal

Q9) 3 sides

Q10) Square

Q11) Parallelogram

Q12) 1350, 600, 900, 750

Q13) Trapezium

Q14) A opposite angles are equal
Each of opposite angles = 1000
The angles adjacent to 1000
= $180 - 100 = 800$
Then the angles are 800, 1000, 800, 1000

Q15) Perimeter = $2(32) = 64$ cm

Let one side = x

Q16) Other side = $10 + x$
 $2(x + 10 + x) = 100$
 $2x + 10 = 50$
 $2x = 40$
 $x = 20$
 The sides are 20, 30, 20, 30.

Q17) Other opposite angle = 1100
 Adjacent angle = $110 - 70$
 = 400

Q18)

$$\begin{array}{r}
 3 \overline{) 3087} \\
 \underline{3} \\
 0 \\
 0 \\
 7 \overline{) 343} \\
 \underline{7} \\
 0 \\
 0 \\
 7 \overline{) 49} \\
 \underline{7} \\
 0 \\
 7 \overline{) 7} \\
 \underline{7} \\
 0 \\
 1
 \end{array}$$

$$3087 = 7 \times 7 \times 7 \times 3 \times 3$$

Prime factor 3 is not in the group of three

So 3087 should be divided by $3 \times 3 = 9$

$$\frac{3087}{9} = \frac{7 \times 7 \times 7 \times 3 \times 3}{9} = 7 \times 7 \times 7$$

$$\begin{aligned}
 \sqrt{343} &= \sqrt{7 \times 7 \times 7} \\
 &= 7
 \end{aligned}$$

Q19) Each side = $72/4 = 18$ cm

Q20) Perimeter = $4 \times 9 = 36$ cm