

Class – VIII

Mathematics

Understanding Quadrilaterals

Worksheet (BASIC) Max. marks - 60

Section – A

(1 x 10 = 10)

Choose the correct option :

1. A simple closed curve made up of only line segments is called a

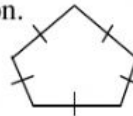
- (a) Circle (b) Polygon (c) Line segment (d) None of them

2. The sum of the measures of the exterior angles of any polygon is -

- (a) 180° (b) 360° (c) 270° (d) 540°

3. Find x in the given figure, if it is a regular pentagon.

- (a) 110° (b) 108° (c) 105° (d) 100°



4. One angle of a quadrilateral is 150° and other three angles are equal. What is the measure of each of these equal angles ?

- (a) 75° (b) 85° (c) 95° (d) 70°

5. Two adjacent sides AB and BC of a parallelogram ABCD are in the ratio 5 : 3. If the perimeter is 200 cm, what is the length of AB and BC ?

- (a) 25 cm & 50 cm (b) 40 cm & 37.5 cm (c) 62.5 cm & 37.5 cm
(d) 60 cm & 62.5 cm

Fill the blanks for the following statements :

6. A parallelogram having all sides equal is called a
7. A quadrilateral having exactly one pair of parallel sides is called a
8. If the consecutive sides of a parallelogram are equal, then it is necessarily a
9. Sum of interior angles of a polygon of 10 sides is
10. The number of sides of a regular polygon whose each exterior angle is 60° is

Section – B

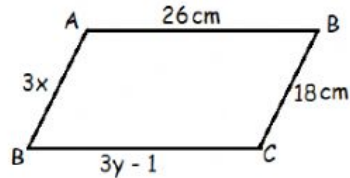
(1 x 5 = 5)

11. Five angles of a hexagon are 150° , 95° , 80° , 135° & 125° . Find the sixth angle.
12. How many diagonals are there in a hexagon ?
13. Find the measure of each interior angle of a regular pentagon.
14. One angle of a parallelogram is 60° . Find its opposite angle and the adjacent angle.
15. ABCD is a trapezium with $AB \parallel DC$. If $\angle A = 50^\circ$, then find $\angle D$.

Section – C

(2 x 5 = 10)

16. An exterior angle and the interior angle of a regular polygon are in the ratio 2 : 7. Find the number of sides of the polygon.
17. In parallelogram ABCD. Find x and y.

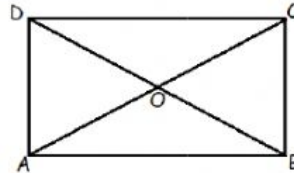


18. Find the number of sides of a regular polygon whose each exterior angle measures 60° .
19. Four angles of a quadrilateral are in the ratio 3 : 4 : 5 : 6. Find its angles.
20. ABCD is a rhombus with $\angle DAB = 56^\circ$. Determine $\angle DBC$.

Section – D

(3 x 5 = 15)

21. In the given figure, ABCD is a rectangle and its diagonals meet at O. Find x, if $OA = (2x + 4)$ and $OD = (3x + 1)$. Also find BD.

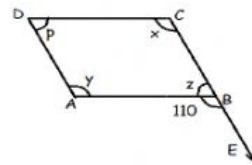


22. Prove that the diagonals of a rhombus bisect each other.
23. Two adjacent angles of a parallelogram are $(3x - 4)^\circ$ & $(3x + 10)^\circ$. Find the angles of the parallelogram.
24. Three angles of a quadrilateral are in the ratio 4 : 6 : 3. If the fourth angle is 100° , find the three angles of the quadrilateral.
25. One side of a parallelogram is 4.8 cm and the other side is $1\frac{1}{2}$ times of this side. Find the perimeter of the parallelogram.

Section – E

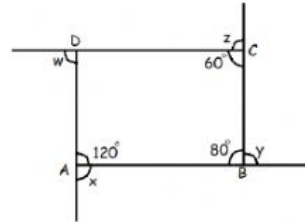
(4 x 5 = 20)

26. The sum of two angles of a quadrilateral is 160° . The other two angles are in the ratio 2 : 3. Find the angles.
27. The measure of the diagonal of a rectangle is 5 cm. If one of its sides is 3 cm, then find its perimeter.
28. In the given figure, ABCD is a parallelogram. Find the value of x , y , z , p .



29. The diagonals of a rhombus are 6 cm and 8 cm respectively. Find the length of the sides of the rhombus. Also find its perimeter.

30. Find $x + y + z + w$ in the given figure.



Class – VIII

Mathematics

Understanding Quadrilaterals

Worksheet (STANDARD) Max. marks – 40

Section – A

Q . 1. Choose the correct option : (1 x 10 = 10)

(i) If three angles of a quadrilateral are each equal to 75° , the fourth angle is :-

- (a) 150° (b) 135° (c) 45° (d) 75°

(ii) What is the maximum number of obtuse angles that a quadrilateral can have ?

- (a) 1 (b) 2 (c) 3 (d) 4

(iii) ABCD is a rhombus such that $\angle ACB = 40^\circ$. Then $\angle ADB$ is

- (a) 40° (b) 45° (c) 50° (d) 60°

(iv) If PQRS is a parallelogram, then $\angle P - \angle R$ is

- (a) 90° (b) 45° (c) 60° (d) 0°

(v) ABCD is a square, diagonal AC is joined. Then the measurement of $\angle ACB$ is

- (a) 35° (b) 40° (c) 45° (d) 50°

Q . 2. Complete the following statements with appropriate word(s) in the blank space.

- (i) A diagonal of a parallelogram divides it into two triangles.
- (ii) The bisectors of any two adjacent angles of a parallelogram intersect at
- (iii) An angle of a rhombus is 40° more than its adjacent angle. Then this angle is
- (iv) The number of sides of a regular polygon, where each exterior angle has a measure of 36° , is
- (v) A rectangle whose adjacent sides are equal becomes a

Section – B

(1 x 3 = 3)

Q . 3. Find the sum of all interior angles of a heptagon.

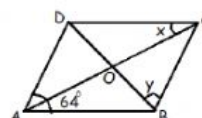
Q . 4. In a quadrilateral PQRS, $\angle P = 50^\circ$, $\angle Q = 60^\circ$, $\angle R = 60^\circ$. Find $\angle S$.

Q . 5. In a parallelogram PQRS, if $\angle P = (3x - 5)^\circ$ and $\angle Q = (2x + 15)^\circ$, then find the value of x .

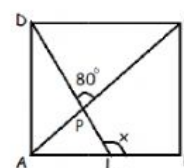
Section – C (2 x 3 = 6)

Q . 6. If one angle of a parallelogram is 24° less than twice the smallest angle then, find the largest angle of the parallelogram.

Q . 7. In the figure, ABCD is a rhombus. Find x & y .

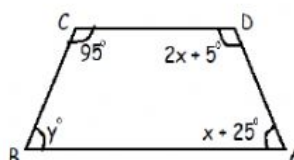


Q . 8. In the figure, ABCD is a square. If $\angle DPC = 80^\circ$, then find x .

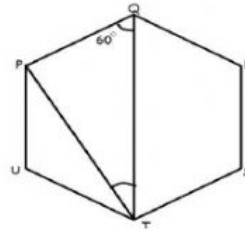


Section – D (3 x 3 = 9)

Q . 9. In the adjoining figure, ABCD is a trapezium in which $\angle A = x + 25^\circ$, $\angle B = y$, $\angle C = 95^\circ$ & $\angle D = 2x + 5^\circ$, then find the values of x & y .

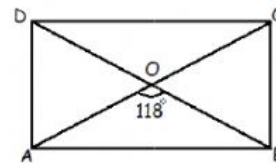


Q . 10. In the given figure, PQRSTU is a regular hexagon. If $\angle PQT = 60^\circ$, then find $\angle PTQ$.



11. In the adjoining figure, ABCD is a rectangle and diagonals intersect at O. If $\angle AOB = 118^\circ$, find

- (i) $\angle ABO$ (ii) $\angle ADO$ (iii) $\angle OCB$

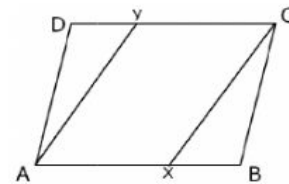


Section – E

(4 x 3 = 12)

12. The perimeter of a parallelogram is 80 m. If the longer side is 10 m greater than the shorter side, then find the length of each side.

13. In the figure AX & CY are respectively the bisectors of the opposite angles A & C of a parallelogram ABCD. Show that $AX \parallel CY$.



14. One of the diagonals of a rhombus is congruent to one of its sides. Find the angles of the rhombus.
