Atomic Energy Education Society

Session : 2023 – 24

Class: VIII   **Subject: Mathematics**

WORKSHEET NO.- 1

**Name of the Chapter : Chapter 3 Understanding Quadrilaterals**

1. This work sheet is divided into **five** sections-**A, B, C.D and E.**
2. **Section A**-Question No, **1** to **10** are multiple choice questions. Each question carries **1** mark.
3. **Section B** -Question No. **11** to **20** are Very Short answer type questions. Each question carries **1** marks.
4. **Section C**- Question No. **21 to 30**. Each question carries **2** marks.
5. **Section D** -Question No. **31** to **35**. Each question carries **3** marks.
6. **Section E**- Question No. **36** to **40** carry **5** marks.

SECTION – A   (1 x 10 = 10 Marks)

Choose the correct option

1. The sum of the angles of a hexagon is_____

    (a) 360º   b) 540º   c) 720º   d) 1080º

2. If one angle of a parallelogram is 65º, then the measure of the adjacent angle is

    (a)115º   (b) 65º   (c)125º   (d) 180º

3. What is the measure of each exterior angle of a regular polygon of 15 sides?

    (a) 30°   (b) 45°   (c) 60°   (d) 24°

4. If two adjacent angles of a parallelogram are $(5x - 5)^0$ and $(10x +35)^0$, then the ratio

    of these angles is

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

5. When the sum of the interior angles of a polygon is 10 right angles, then how many sides

    does it have?

    (a) 6   (b) 12   (c) 8   (d) 7

6. Select a false statement from those given below:

    (a) A square is a rectangle that has equal adjacent sides.

    (b) A square is a rhombus whose one angle is a right angle.

    (c) The diagonals of a square bisect each other at right angles.

    (d) The diagonals of a square do not divide the whole square into four equal parts.

7. In the given figure, ABCD and BDCE are parallelograms with common base DC.

    If **BC⊥BD**, then ∠**BEC** is equal to_____.
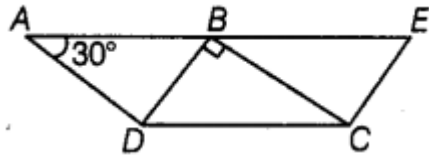
(a) 60°   (b) 30°   (c) 150°   (d) 120°

8. Length of one of the diagonals of a rectangle whose sides are 10 cm and 24 cm is

   (a) 25 cm   (b) 20 cm   (c) 26 cm   (d) 3.5 cm

9. Which of the following can never be the measure of exterior angle of a regular polygon?

   (a) 22°   (b) 36°   (c)45°   (d) 30°

10. PQRS is a trapezium in which PQ || SR and ∠P = 130°, ∠Q = 110°.

Then, **∠R** is equal to………..

(a) 70°   (b) 50°   (c)65°   (d) 55°

SECTION – B   (10 x 1 = 10M)

11. The sum of interior angles of a polygon of n sides is -------------.

12. If m- 5 = 2, then the value of m is ----------------.

13. In a square ABCD if AC = (7m- 2)cm and BD = (11m-10)cm, then m=---------------

14. The number of sides of a regular polygon whose each interior angle is of 135° is ………

15. PQRS is a square. PR and SQ intersect at 0. Then, **∠POQ** is_____.

16. How many sides does a regular polygon have if each of its interior angles is 165° ?

17. In a square ABCD all sides and angles are _____.

18. What is the sum of all the angles of a pentagon?

19. How many non-overlapping triangles can we make in a polygon having n sides, by joining the vertices?

20. If three angles of a quadrilateral are each equal to 55°, then, the fourth angle is ____.

SECTION – C   (10 x 2 = 20M)

21. What is the measure of each exterior angle of a regular polygon of 12 sides?

22. The measures of the two adjacent angles of a parallelogram are in the given ratio 3: 2.
    Find the measure of all the angles of the parallelogram.

23. In a quadrilateral ABCD, ∠D is equal to 150° and ∠A = ∠B = ∠C. Find ∠A, ∠B and ∠C.

24. How many diagonals does a hexagon have?

25. A polygon is having 27 diagonals. How many sides does it have?

26. Draw a rough figure of a quadrilateral that is not a parallelogram but has exactly two opposite angles of equal measure.

27. A regular polygon is having exterior angle 36°. What will be its interior angle?

28. How many sides a regular polygon has if each interior angle is equal to 150°?

29. If the exterior angles of a polygon are in the ratio of 1 : 2 : 3 : 4 : 5, then find the largest interior angle.

30. The exterior angle of a regular polygon is one third of its interior angle. Find the number of sides of the polygon.

SECTION – D   (3x 5 = 15 M)

31. Find the perimeter of a rhombus whose diagonals are of lengths 6cm and 8 cm.

32. Name the quadrilaterals whose diagonals

      i)   bisect each other

      ii)   are perpendicular bisectors of each other.

      iii)   are equal.

33. ABCD is a parallelogram. If AB, BC, CD & DA are 26cm, 18cm, 3y-1cm & 3x cm respectively, find the value of x and y.

34. (i) It is possible to have a regular polygon having each exterior angle as 75°. Mark True / False.

   (ii) The angles of a hexagon are $x + 10°$, $2x + 20°$, $2x − 20°$, $3x − 50°$, $x + 40°$, and $x +20°$. Find the value of x°.

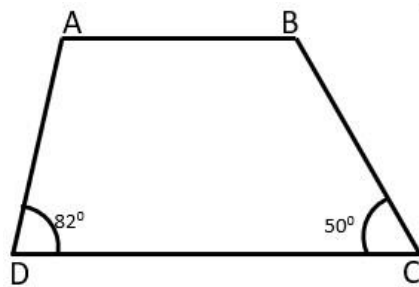35. In the below mentioned figure ABCD is a parallelogram. Find the value of p, q and r.
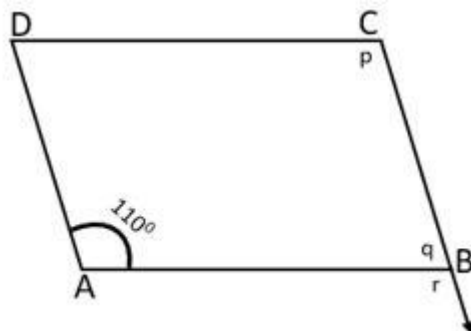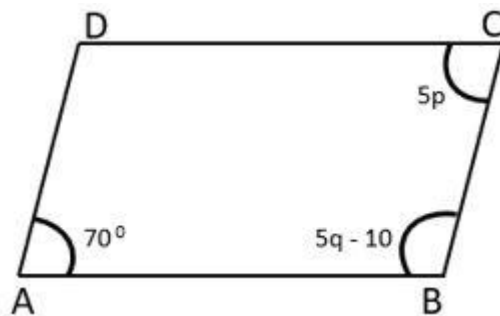
36 (i) In the below given trapezium ABCD, AB∥CD. Find the measure of ∠D.
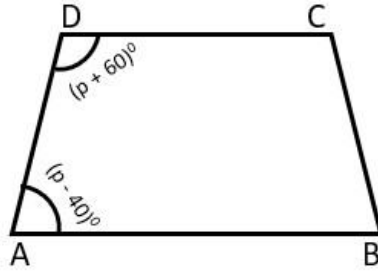
(ii) In the below given ABCD trapezium, AB∥CD. Find the measure of ∠A + ∠B.
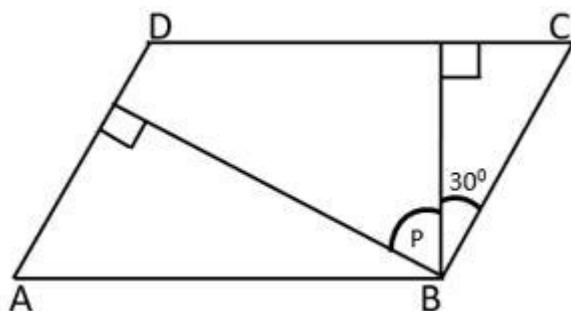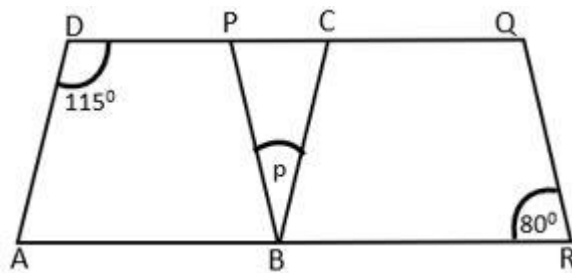

37. ABCD is a parallelogram.
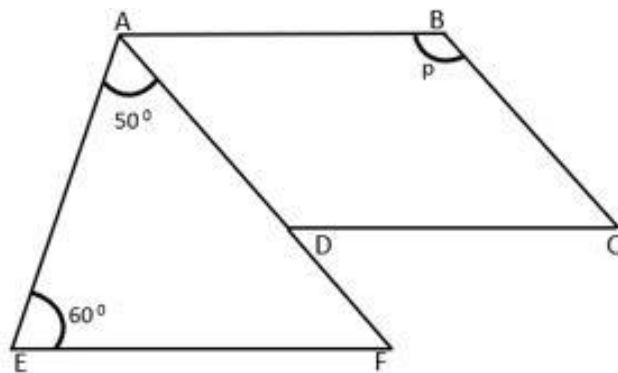
(i) Find the value of p and q in the parallelogram.

(ii) Find the value of p in the below given figure.

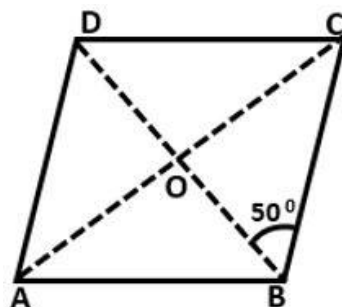38. ABCD and PQRB are parallelograms. Find the value of p in the below given figure.

39. In the below given figure, CD || EF || AE and AF || BC. Find the value of ∠F, ∠C and ∠B.

40. ABCD is a rhombus,

   (i) Find the value of ∠CAD.

   (ii) Find the value of a, b and c in the below given rhombus.