VIII UNDERSTANDING QUADRILATERALS

1) A simple closed curve made up of only ___ is called a polygon.
(a) curves (b) line segments (c) lines (d) closed curves
ans:- line segments (b)

2) A polygon with minimum no. of sides is _____
(a) Pentagon (b) Square (c) triangle (d) angle
ans:- triangle (c)

3) Polygons that have no portions of their diagonals in their exteriors are called _____
(a) squares (b) triangles (c) convex (d) concave
ans:- Convex polygons (c)

4) Polygons that have any portions of their diagonals in their exteriors are called _____
(a) squares (b) triangles (c) convex (d) concave
ans:- concave polygons (d)

5) All the sides of a regular polygon are ____
(a) parallel (b) equal in length (c) not parallel (d) not equal.
ans:- equal in length (b)

6) All the angles of a regular polygon are of ____
(a) 90° (b) 60° (c) equal measure (d) equal length
ans:- equal measure (c)

7) Sum of all interior angles of a polygon with n sides is given by
(a) $(n-2)\times 180^\circ$ (b) $(n-2)\times 360^\circ$ (c) $(n+2)\times 180^\circ$ (d) $(n+2)\times 360^\circ$
ans:- $(n-2)\times 180^\circ$ (a)

8) Maximum number of right angles in a right angled triangle are (a) 2 (b) 1 (c) 3 (d) 0
ans:- 1 (b)

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9) Sum of all interior angles of a parallelogram is
(a) 180° (b) 360° (c) 540° (d) 240°.

ans:- 360° (b)

10) The angle sum of all interior anglis of a convex polygon of sides 7 is (a) 180° (b) 540° (c) 630° (d) 900°

ans:- sum of all interior angles = $(n-2)\times 180°$
$= (7-2)\times 180° = 5\times 180°$
$= 900°$ (d)

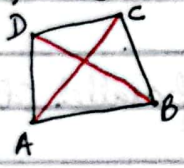
11) Each exterior angles of a regular hexagon is of measure (a) 120° (b) 80° (c) 100° (d) 60°

ans:- each exterior angle = $\frac{360°}{n} = \frac{360°}{6} = 60°$ (d)

12) The number of sides in a regular polygon is 15, then measure of each exterior angle is
(a) 24° (b) 36° (c) 20° (d) 18°

ans:- each exterior angle = $\frac{360°}{n} = \frac{360°}{15} = 24°$ (a)

13) How many diagonals does have in a convex quadrilateral
(a) 2 (b) 1 (c) 3 (d) none of these

ans:- 

2 (a)

14) How many diagonals does a regular hexagon have?
(a) 2 (b) 1 (c) 3 (d) none of these

ans:- no. of sides = 6
no. of diagonals = $\frac{n(n-3)}{2} = \frac{6(6-3)}{2} = \frac{6\times 3}{2_1} = 9$;

none of these (d)

15) How many diagonals does a triangle have?
(a) 2 (b) 1 (c) 0 (d) none of these

ans:- 0 (c)

16) The measure of each interior angle of a regular polygon is 140°, then number of sides that

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regular polygon has (a) 15 (b) 12 (c) 9 (d) 10

ans:- each exterior angle = 180° − each interior angle (linear pair)
= 180° − 140° = 40°

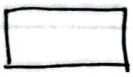
∴ no. of sides = $\frac{360^\circ}{\text{each exterior angle}}$ = $\frac{360^\circ}{40^\circ}$ = 9 (c)

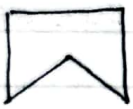
17) Which of the following polygons is convex polygon?

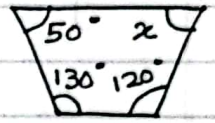
(a)  (b)  (c)  (d) 

ans:- (c) 

18) Which of the following is concave polygon?

(a)  (b)  (c)  (d) 

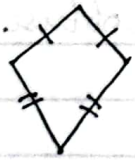
ans:-  (c)

19) The value of x in the following figure is 

(a) 120° (b) 80° (c) 100° (d) 60°

ans:- 50° + x + 130° + 120° = 360° (angle sum property of a quadrilateral)
x + 300° = 360°
x = 360° − 300° = 60° (d)

20) A quadrilateral which has 2 pairs of equal adjacent sides but unequal opposite sides is called ____
(a) parallelogram (b) rhombus (c) kite (d) square

ans:- kite (c) 

21) The value of x in the following figure is 

(a) 100° (b) 90° (c) 108° (d) 120°

ans:- Sum of all interior angles = (n − 2) × 180° = (5 − 2) × 180°
= 3 × 180° = 540°

∴ x = $\frac{540^\circ}{5}$ = 108° (c)

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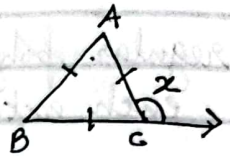
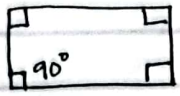
22) The value of x in the following figure is
(a) 120° (b) 180° (c) 60° (d) 100°



ans:- Since $AB = BC = AC$, $\triangle ABC$ is an equilateral.
$\Rightarrow \angle A = \angle B = \angle C = 60°$
$\angle ACB + x = 180°$ (linear pair)
$\therefore x = 180° - 60° = 120°$ (a)

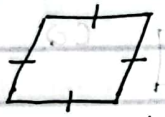
23) A parallelogram each of whose angles measures 90° is ___
(a) rectangle (b) rhombus (c) kite (d) trapezium

ans:- rectangle (a)



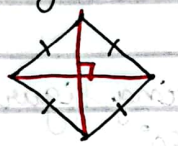
24) A parallelogram whose all sides are equal is called ___
(a) square (b) rhombus (c) rectangle (d) trapezium

ans:- rhombus (b)



25) The diagonals of a rhombus bisect each other at ___ angles.
(a) acute (b) right (c) obtuse (d) reflex

ans:- right (b)



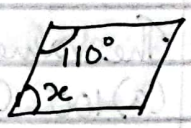
26) Diagonals of a rectangle :
(a) equal to each other (b) not equal
(c) one is double of the other (d) none of these

ans:- equal to each other (a)

27) The diagonals of a square bisect each other at ___ angle
(a) acute (b) right (c) obtuse (d) reflex

ans:- right (b)

28) The value of x in the following figure is
(a) 60° (b) 70° (c) 180° (d) 90°



ans:- $x + 110° = 180°$ [adjacent angles of a parallelogram are supplementary]
$\therefore x = 180° - 110° = 70°$ (b)

29) Minimum possible interior angle in a regular polygon is ___ (a) 70° (b) 60° (c) 90° (d) 120°

ans:- 60° (b)

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30) Maximum possible exterior angle in a regular polygon is—
(a) 70° (b) 60° (c) 90° (d) 120°

ans:- 120° (d)

120° / 60° linear pair

31) How many sides does a heptagon have ?
(a) 2 (b) 4 (c) 7 (d) 5

ans:- 5 (d)

32) Name the closed figure with 4 sides?
(a) hexagon (b) triangle (c) pentagon (d) quadrilateral

ans:- quadrilateral (d)

33) How many diagonals does a regular hexagon has?
(a) 2 (b) 9 (c) 3 (d) 5

ans:- $n = 6$

no. of diagonals $= \frac{n(n-3)}{2} = \frac{6(6-3)}{2} = \frac{6 \times 3}{2} = 9$ (b)

34) What is the number of sides in hexagon ?
(a) 4 (b) 7 (c) 6 (d) 5

ans:- 6 (c)

35) What is the sum of the measures of angles of a convex quadrilaterals ?
(a) 180° (b) 90° (c) 360° (d) 45°

ans:- 360° (c)

36) If the three angles of a quadrilateral are 120°, 130°, 10° then what is the fourth angle ?
(a) 30° (b) 100° (c) 40° (d) 90°

ans:- $120° + 130° + 10° + x = 360°$ (angle sum property of a quadrilateral)

$x = 360° - 260° = 100°$ (b)

37) The opposite angles of a parallelogram are
(a) unequal (b) equal (c) complementary (d) supplementary

ans:- equal (b)

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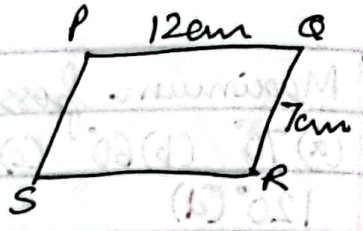
38) The perimeter of parallelogram PQRS is



(a) 12cm (b) 7cm (c) 38cm (d) 19cm

ans:- Since opposite sides of a parallelogram are equal, PQ = RS = 12cm

QR = PS = 7cm.

∴ perimeter = PQ + QR + SR + PS

= 12 + 7 + 12 + 7 = 38cm (c)

39) The diagonals of a square are ____ each other.

(a) equal to (b) unequal to (c) perpendicular bisector (d) both (a) and (c)

ans:- diagonals of a square are equal and perpendicular bisector to each other (d)

40) A parallelogram with sides of equal length is called ____

(a) trapezium (b) square (c) rectangle (d) rhombus

ans:- rhombus

41) How many measurements can determine a quadrilateral uniquely?

ans:- 5 (d)

42) Diagonals of a parallelogram ____ each other.

(a) bisect (b) equal to (c) perpendicular to (d) none of these

ans:- bisect (a)

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