INDIAN SCHOOL AL WADI AL KABIR

Class VIII, Mathematics ***Worksheet- UNDERSTANDING QUADRILATERALS- PROPERTIES OF SPECIAL QUADRILATERALS***

11-04-2020 ANSWER KEY

OBJECTIVE TYPE (1 Mark)

Q.1. Two adjacent angles of a parallelogram are equal. The measure of each angle is:

A 90° B C D

Q.2. The quadrilateral having only one pair of opposite sides parallel is called a:

A B C Trapezium D

Q.3. In a trapezium ABCD, AB is parallel to CD. If $\angle A = 50°$, then $\angle D$ is:

A B 130° *C* D

Q.4. The diagonals of a parallelogram ABCD intersect at O. If $\angle BOC = 85°$ and $\angle BDC = 65°$, then $\angle OAB$ is :

A B 20° C D

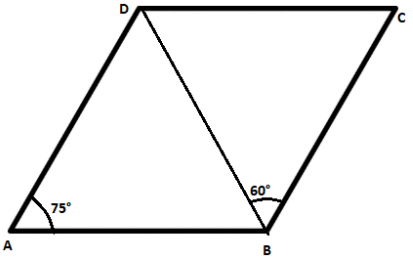
Q.5. The minimum interior angle possible for a regular polygon is:

A 60° B C D

Q.6. Name the quadrilateral if two pairs of adjacent sides are equal:

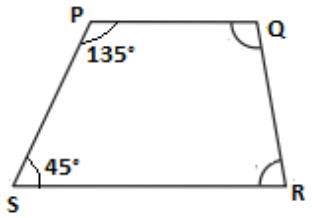
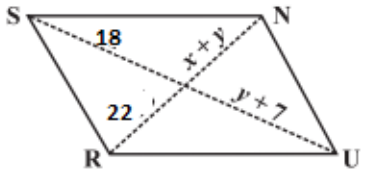
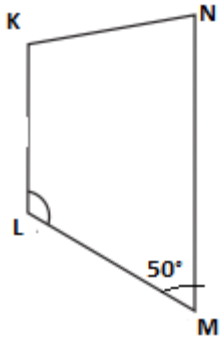
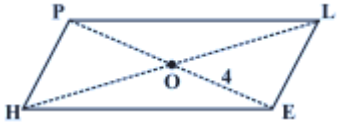
A B C D Kite

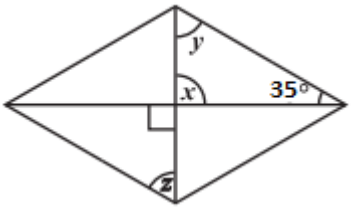
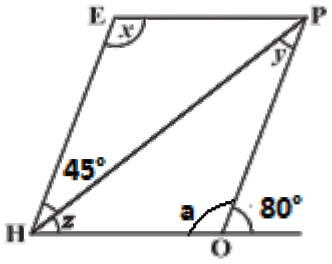
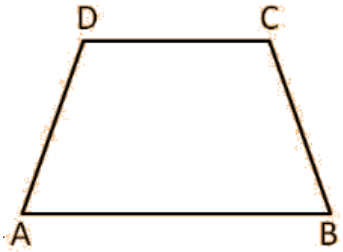
Q.7. In the figure, ABCD is a parallelogram in which $\angle BAD = 75°$ and $\angle DBC = 60$. Then $\angle CDB$ is equal to:



A B C 45° Q

Q.8.	If the adjacent angles of a parallelogram are equal, then the parallelogram is a							
Q	A	Rectangle	B		C		D	
Q.9.	A parallelogram with all sides equal is called							
	A		B		C		D	Rhombus
Q.10	In a quadrilateral KLMN, $\angle K = 115°$, $\angle L = 65°$,$\angle M = 115°$,and $\angle N = 65°$, identify the type of quadrilateral							
	A	Parallelogram	B		C		D	
Fill in the blanks(1mark)								
Q11.	If PQRS is a parallelogram, $\angle P = 105°$, then the measure of $\angle Q$ is $75°$							
Q12.	A rectangle is a CONVEX quadrilateral.							
Q13.	The adjacent sides of a rhombus are 18units and 3x units. Then the value of x is _____. The adjacent sides of a rhombus are qual $3x = 18$ $X = 18/3 = 6$							
Q14.	In a rhombus, diagonals intersect at RIGHT angles.							
Q15.	SQUARE is a regular quadrilateral.							
SECTION B (2 marks)								
Q16.	ABCD is a rectangle whose diagonals are (2x+6) cm and (3x +4) cm. Find the value of x and also find the length of the diagonal. Diagonals of a rectangle are equal $2x+6 = 3x+4$ $X = 2$ Therefore, lengths of diagonals are $2 \times 2 + 6 = 10$cm each							

Q17.	**Explain how this figure is a trapezium. Which of its two sides are parallel?** **$\angle P + \angle Q = 135^\circ + 45^\circ = 180^\circ$ (One set of co-interior angles are supplementary)** **Therefore, PQ is parallel to RS** **If one pair of opposite sides are parallel, then that figure is a trapezium.** 
Q18.	Find the value of x and y from the given parallelogram. Diagonals of a parallelogram bisect each other. $Y + 7 = 18$ $Y = 18 - 7 = 11$ $X + y = 22$ $X + 11 = 22$ $X = 22 - 11 = 11$ 
Q19.	**Find the value of m $\angle L$, if KL is parallel to MN** **if KL is parallel to MN, $\angle L + \angle M = 180^\circ$ (co-interior angles are supplementary)** **$\angle L + 50^\circ = 180^\circ$** **$\angle L = 180^\circ - 50^\circ = 130^\circ$** 
Q20.	From the fig. **find the value of OL if OE = 4 and HL is 6 more than PE.** **Given figure PHEL is a parallelogram.** **if OE = 4, HL = 6 more than PE = 6 + PE** But $PE = 2 \times 4 = 8$ $HL = 6 + 8 = 14$ Diagonals of a parallelogram bisect each other. $OL = 14/2 = 7cm$ 
	SECTION C (4marks)
Q21.	Lengths of two sides of a parallelogram are in the ratio of 2: 3. Find the sides of the parallelogram if its perimeter is 120cm. Let the length of sides are 2x and 3x $2x + 3x + 2x + 3x = 120$ (perimeter) $10x = 120$ $X = 120/10 = 12$ Therefore, its sides are $2x = 2 \times 12 = 24$, $3x = 3 \times 12 = 36$ Since opposite sides are Equal, Sides are 24cm, 36cm, 24cm and 36 cm

Q22.	Find the value of x, y and z from the given rhombus. $X = 90°$ (Vertically opposite angles are equal) $90° + 35° + y = 180°$ (Angle sum property of a triangle) $125° + y = 180°$ $y = 180° - 125° = 55°$ $z = 55°$ (alternate interior angles are equal) 
Q23.	Find the value of x, y and z from the given parallelogram. $y = 85°$ (opposite angles are equal) $z = 85°$ (corresponding angles are equal) $85° + x = 180°$ (co-interior angles are supplementary) $X = 180° - 85° = 95°$
Q24.	Find the value of x, y and z from the given parallelogram $80° + a = 180°$ (linear pair) $a = 180° - 80° = 100°$ $45° + z + a = 180°$ (co-interior angles are supplementary) $45° + z + 100° = 180°$ $z + 145° = 180°$ $z = 180° - 145° = 35°$ $y = 45°$ (alternate interior angles are equal) 
Q25.	In a trapezium ABCD, AB is parallel to CD, $\angle A : \angle D = 7 : 2$ and $\angle B : \angle C = 4 : 5$. Find the angles of the trapezium. $\angle A = 7x$, $\angle D = 2x$, $\angle B = 4x$, $\angle C = 5x$ AB is parallel to CD $7x + 2x = 180°$ (co-interior angles are supplementary) $9x = 180°$ $X = 180/9 = 20°$ $\angle A = 7x = 7 \times 20° = 140°$ $\angle B = 4x = 4 \times 20° = 80°$ $\angle C = 5x = 5 \times 20° = 100°$ $\angle D = 2x = 2 \times 20° = 40°$