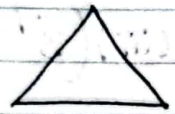
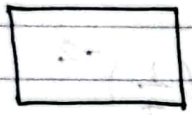
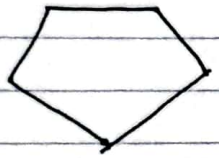
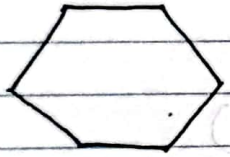
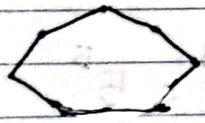
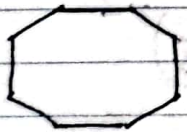
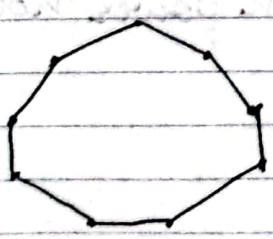
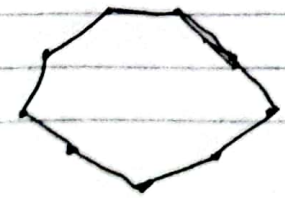
VIII Revision - Understanding Quadrilaterals

1) A simple closed curve made up of only line segments is called a _____
2) A _____ is a line segment connecting two non-consecutive vertices of a polygon.
3) Polygons that have no portions of their diagonals in their exteriors are called ___ polygons.
4) Polygons that have some portions of their diagonals in their exteriors are called _____
5)

Figure	No. of vertices	Classification
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	

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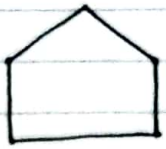
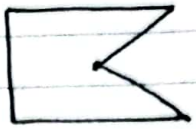
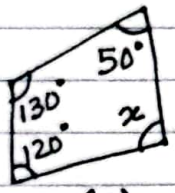
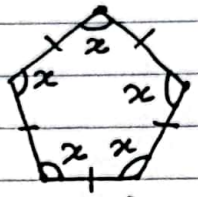
6) Identify the type of polygon.

(i)  (ii) 

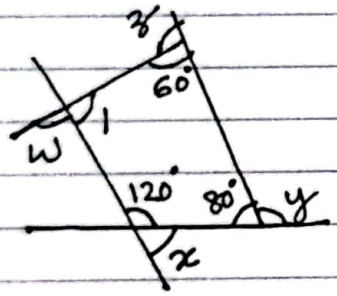
7) A regular polygon is both ____ and ____.
8) Polygons having sides of equal length and angles of equal measure are called ____.
9) Give 3 examples of a regular polygon
10) Polygons that are not regular are called ____.
11) Give two examples of an irregular polygon.
12) Why rectangle is not a regular polygon?
13) Sum of the measures of the three angles of a $\triangle$ is ___
14) Sum of the measures of four angles of a quadrilateral is ___
15) How many diagonals a regular hexagon have?
16) Find the angle measure of x



(i)



(ii)

17) 

find $x+y+w+z$

18) The sum of the measures of the external angles of any polygon is ____
19) Number of diagonals in a polygon of n sides = ____
20) The sum of all interior angles of an n-sided polygon is ____
21) Each interior angle of a regular polygon = ____
22) Each exterior ~~of~~ angle of a polygon of n-sides = ____
23) No. of sides of a polygon = ____

____.

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VII. Revision – Understanding Quadrilaterals (Answers)

1) polygon
2) diagonal
3) convex
4) concave
5) triangle, quadrilateral, pentagon, hexagon, heptagon, octagon, nonagon, decagon.
6) (i) convex polygon
   (ii) Concave polygon
7) equilateral, equiangular
8) regular polygons
9) Square, equilateral triangle, regular hexagon.
10) irregular polygons.
11) rectangle, scalene triangle.
12) Rectangle is equiangular (90° each) but not equilateral (only opposite sides are equal)
13) 180°
14) 360°
15) no. of diagonals of a polygon of n sides $= \frac{n(n-3)}{2}$

no. of diagonals of a regular hexagon $(n=6) = \frac{6(6-3)}{2} = \frac{6\times3}{2}$

$= 9$ diagonals //

16) (i) Using angle sum property of a quadrilateral,

$130^\circ + 50^\circ + 120^\circ + x = 360^\circ$

$x = 360^\circ - 300^\circ$

$= 60^\circ$ //

(ii) Sum of angles of a regular pentagon $= (n-2)\times180^\circ$

$= (5-2)\times180^\circ = 3\times180^\circ = 540^\circ$

$\therefore$ each angle, $x = \frac{540^\circ}{5} = 108^\circ$ //

17) Sum of all exterior angles of a polygon $= 360^\circ$

$\therefore x + y + z + w = \underline{\underline{360^\circ}}$

18) 360°

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

20) $(n-2)\times 180^\circ$ or $(2n-4)\times 90^\circ$

21) $\frac{(n-2)\times 180^\circ}{n}$

22) $\frac{360^\circ}{n}$

23) $\frac{360^\circ}{\text{each exterior angle.}}$

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