INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet for the Academic Year 2026-27

CLASS: VI SUBJECT: MATHEMATICS DATE: 05-05-2026

LESSON 1: PATTERNS IN MATHEMATICS

1. The branch of mathematics that studies patterns in whole numbers is called----------
2. When we add the consecutive odd numbers starting from 1, we get ---------- sequence
3. A regular hexagon has------ equal sides.
4. The next number in the triangular sequence 1, 3, 6, 10 ,…. is-------
5. The sequence 1, 2,4, 8,16 ,…. is called---------
6. The fifth shape in a pattern when we start with a triangle and the number of sides increase by one each time is-------
7. What is Virahanka sequence?
8. Draw a Heptagon.
9. Visualise the square number 64 using dots
10. What are hexagonal numbers? Represent the first three numbers in the sequence pictorially.
11. Find the 10^{th} member of the sequence: 2, 4, 6, 8, ……
12. Write the following:
    a) Counting number sequence
    b) odd number sequence
    c) Even number sequence
    d) square number sequence
    e) Cube number sequence
    f) Triangular number sequence
    g) Virahanka numbers
    h) Powers of 2 number sequence
    i) Powers of 3 number sequence
13. Find the value of :1 + 2 + 3 + …… + 24 + 25 + 24 + ….. + 3 + 2 + 1
14. Draw stacked squares representing 36 squares.
15. Draw stacked triangles to represent 25 triangles
16. Find the rule used in the sequence: 3, 12, 48, ……..

17. Write the next three numbers in the number of sides of Koch snowflakes sequence: 3, 12, 48, …..
18. Create a pattern using the rule 'Add 5 to the previous number starting with 3'.
19. How can we represent square numbers adding up and down? Show five numbers in the sequence.
20. Express the first four triangular numbers pictorially using dots.
21. What sequence do we get if we add the consecutive odd numbers starting with one? Show the steps used.
22. Form a sequence by adding two consecutive even number and then minus one.
23. Identify the pattern and write the next three numbers to complete the given pattern:
    a) 7, 14, 21, 28, 35, ……
    b) 1, 8, 27, 64,125, ……..

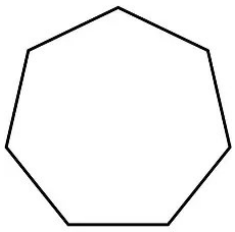
Answers:

1. Number Theory 2. Square Number 3. 6 4. 15

5.powers of 2 6. Heptagon (7-sided polygon)

7. A sequence of numbers in which each number in the sequence except one is the sum of the two preceding numbers is called Virahanka numbers.

8.



9. Do Self

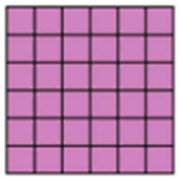
10. Hexagonal numbers can be visualised in the form of a hexagon by using dots where the central row consists of odd number of dots. The first three numbers in the sequence are: 1,7,19.

11. 20

12. Check TB pg. no: 3

13. 625

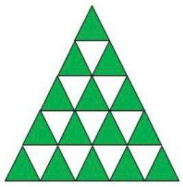
14.



6

6x6=36

15.



16. The next number is 4 times the preceding number.

17. $48 \times 4 = 192$

$192 \times 4 = 768$

$768 \times 4 = 3072$

18. 3, 8,13,18,23,28, …….

19. $1\ (1^2)$

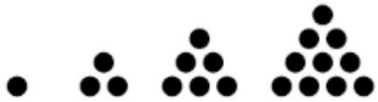
$1 + 2 + 1 = 4\ (2^2)$

$1 + 2 + 3 + 2 + 1 = 9\ (3^2)$

$1 + 2 + 3 + 4 + 3 + 2 + 1 = 16\ (4^2)$

$1 + 2 + 3 + 4 + 5 + 4 + 3 + 2 + 1 = 25\ (5^2)$

20. Represent 1, 3,6,10 using dots



21. 1 = 1

1 + 3 = 4
1 + 3 + 5 = 9
1 + 3 + 5 + 7 = 16
So we get the sequence of square numbers.

22. 0 + 2 = 2, 2 – 1 = 1

2 + 4 = 6, 6 – 1 = 5
4 + 6 = 10, 10 – 1 = 9
6 + 8 = 14, 14 – 1 = 13
8 + 10 = 18, 18 – 1 = 17
So, the sequence is 1,5, 9, 13, 17, …….

23.a) Multiplies of 7

Next 3 terms are 42,49,56

b) These are cube numbers.

$1^3 = 1$

$2^3 = 8$

$3^3 = 27$

$4^3 = 64$

$5^3 = 125$

So the next three numbers in the sequence are :

$6^3 = 216$, $7^3 = 343$, $8^3 = 512$.

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