

Subject: Mathematics

Class: 6

Topic: Number Patterns and Sequences

Levels: Basic, Intermediate, Advanced

Level: Basic

1. Complete the pattern: 2, 4, 6, 8, _____, _____.
2. What is the next number in the sequence: 10, 20, 30, 40, _____?
3. Identify the rule for: 5, 10, 15, 20 (Add 5 / Subtract 5).
4. Rahul counts by 3s: 3, 6, 9, 12, _____. What comes next?
5. Fill in the missing symbol for the pattern: ? ? ? ? _____.
6. A box has 5 laddus. 2 boxes have 10. How many in 3 boxes? _____
7. Complete the sequence of even numbers: 22, 24, 26, _____, 30.
8. Subtract 2 each time: 20, 18, 16, 14, _____, _____.
9. If one ? costs ?10, what is the cost of 4 ? stars? ? _____
10. Identify the pattern of odd numbers: 1, 3, 5, 7, _____, 11.

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Level: Intermediate

1. Find the missing term: 1, 4, 9, 16, ____ (Hint: 1^2 , 2^2 , 3^2 ...).
2. Priya saves ₹50 on Day 1, ₹100 on Day 2, ₹150 on Day 3. How much on Day 5?
3. Complete the Fibonacci-style start: 1, 1, 2, 3, 5, 8, ____.
4. Identify the rule and fill: 100, 90, 81, 73, ____ (Subtracting 10, 9, 8...)
5. Write the next two terms: 11, 22, 33, 44, ____, ____.
6. If $n = 2$, find the value of the pattern $3n + 1$: _____
7. A sequence goes 2, 4, 8, 16. What is the 6th term?
8. Find the missing number in the triangular pattern: 1, 3, 6, 10, ____.
9. Use $?$ to represent a number. If $? + ? = 20$, what is $??$ _____
10. Complete the reverse sequence: 1000, 500, 250, ____.

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Level: Advanced

1. Find the n th term formula for the sequence: 5, 8, 11, 14... (Ans: $3n + 2$).
2. Anish builds a tower with blocks: 1, 4, 7, 10. How many blocks in the 10th row?
3. If the sum of the first ' n ' odd numbers is n^2 , what is the sum of first 10?
4. A pattern follows $(2n^2 - 1)$. Find the 4th term: _____
5. Calculate the sum of the sequence using $?$: $1?$, $2?$, $3?$... up to $5?$. _____
6. Find the wrong number in the sequence: 2, 5, 10, 18, 26 (Hint: $n^2 + 1$).
7. A plant grows 2cm on Day 1, 4cm on Day 2, 8cm on Day 3. Height on Day 7?
8. Solve for the pattern: $(1 \times 8 + 1) = 9$; $(12 \times 8 + 2) = 98$; $(123 \times 8 + 3) =$ _____
9. In a magic square, the sum of rows is 15. If row 1 is 8, 1, 6, find row 2.
10. If a sequence is defined by $a(n) = a(n-1) + 5$ and $a(1) = 12$, find $a(4)$.