

Day 1 – Simple Number Problems

Core Concept Focus

- Loops(`for`, `while`)
 - Simple arithmetic operations
 - Thinking in steps(pattern of input → logic → output)
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Questions List

1. Print Numbers from 1 to N

- Input: 5
- Output: 1 2 3 4 5
-  Teaches basic loop construction.

2. Print Numbers from N to 1 without changing the loop condition of above question

- Input: 5
- Output: 5 4 3 2 1
-  Thinking creatively and manipulating logic within the loop

3. Print All Even Numbers from 1 to N

- Input: 10
- Output: 2 4 6 8 10
-  Introduces conditional checks inside loops.

4. Sum of First N Natural Numbers

- Input: 5
- Output: 15
-  Encourages cumulative addition and variable usage.

5. Product (Factorial) of N

- Input: 5
- Output: 120
-  Reinforces loop control with multiplication logic.

6. Sum of All Even Numbers up to N

- Input: 10
- Output: 30 (2+4+6+8+10)
- ✨ Combines loops + condition + accumulation.

7. Print Squares of Numbers from 1 to N

- Input: 5
- Output: 1 4 9 16 25
- ✨ Introduces arithmetic pattern generation.

Here's a **well-designed Homework / Practice Challenge** set for **Day 1 – Simple Number Problems**, written in the same clean markdown format and aligned with the day's learning goals 

Homework / Practice Challenge

1. Print all numbers divisible by 3 and 5 up to N

- Input: 30
- Output: 15 30
- ✨ Reinforces conditional checks inside loops.

2. Find the sum of all odd numbers up to N

- Input: 10
- Output: 25 (1 + 3 + 5 + 7 + 9)
- ✨ Combines looping with conditional accumulation.

3. Print the cubes of numbers from 1 to N

- Input: 5
- Output: 1 8 27 64 125
- ✨ Extends arithmetic pattern logic beyond squares.

4. Print only the numbers that are both even and perfect squares

- Input: 1 to 20
- Output: 4 16
- ✨ Encourages combining two conditions within one loop.