1. Sum of Digits

Write a program that takes a positive integer and finds the sum of its digits.

- **Input**: `1234`
- **Output**: `10` (1 + 2 + 3 + 4)

2. Reverse a Number

Write a program to reverse a given number.

- **Input**: `54321`
- **Output**: `12345`

3. Armstrong Number

An Armstrong number is a number that is equal to the sum of its own digits each raised to the power of the number of digits. Write a program to check if a given number is an Armstrong number.

- **Input**: `153`
- **Output**: `True` (1^3 + 5^3 + 3^3 = 153)

4. Palindrome Number

Write a program to check if a number is a palindrome. A number is a palindrome if it reads the same forward and backward.

- **Input**: `1221`
- **Output**: `True`

5. Greatest Common Divisor (GCD)

Write a program to find the greatest common divisor (GCD) of two numbers.

- **Input**: `56`, `98`
- **Output**: `14`

6. Factorial

Write a program to calculate the factorial of a number.

- **Input**: `5`

- **Output**: `120` (5! = 5 × 4 × 3 × 2 × 1)

7. Perfect Number

A perfect number is a positive integer that is equal to the sum of its proper divisors (excluding itself). Write a program to check if a given number is a perfect number.

- **Input**: `28`
- **Output**: `True` (Divisors of 28 are 1, 2, 4, 7, 14, and their sum is 28)

8. Prime Number

Write a program to check if a number is prime.

- **Input**: `17`
- **Output**: `True`

9. Find the nth Fibonacci Number

Write a program to find the nth Fibonacci number.

- **Input**: `7`
- **Output**: `13`

10. Sum of First N Natural Numbers

Write a program to find the sum of the first N natural numbers.

- **Input**: `10`
- **Output**: `55`

11. Sum of Squares of Digits

Write a program that calculates the sum of the squares of the digits of a number.

- **Input**: `123`
- **Output**: `14` ($1^2 + 2^2 + 3^2$)

12. LCM (Least Common Multiple)

Write a program to find the least common multiple (LCM) of two numbers.

- **Input**: `12`, `18`
- **Output**: `36`

13. Divisors of a Number

Write a program to find all the divisors of a given number.

- **Input**: `24`
- **Output**: `1, 2, 3, 4, 6, 8, 12, 24`

14. Sum of Digits Until Single Digit

Write a program that sums the digits of a number repeatedly until the result is a single digit.

- **Input**: `9875`
- **Output**: `2` (9+8+7+5 = 29, then 2+9 = 11, then 1+1 = 2)

15. Check if a Number is Even or Odd

Write a program that checks whether a number is even or odd.

- **Input**: `7`
- **Output**: `Odd`

16. Product of Digits

Write a program that calculates the product of the digits of a number.

- **Input**: `234`
- **Output**: `24` (2 × 3 × 4)

17. HCF (Highest Common Factor) of Three Numbers

Write a program to find the highest common factor (HCF) of three numbers.

- **Input**: `24`, `36`, `48`
- **Output**: `12`

18. Check if a Number is a Power of Two

Write a program that checks if a number is a power of two.

- **Input**: `16`
- **Output**: `True` (since 16 = 2^4)

19. Sum of Digits at Odd and Even Positions

Write a program that finds the sum of digits at odd positions and even positions separately (consider positions starting from 1).

- **Input**: `13245`
- **Output**: `Odd Position Sum: 9`, `Even Position Sum: 6`
  (1+3+5 = 9, 2+4 = 6)

20. Count the Number of Digits

Write a program to count the number of digits in a number.

- **Input**: `12345`
- **Output**: `5`

21. Sum of Prime Numbers in a Range

Write a program to find the sum of all prime numbers within a given range.

- **Input**: `10 to 20`
- **Output**: `60` (Prime numbers are 11, 13, 17, 19, sum = 60)

22. Find the Nth Prime Number

Write a program to find the Nth prime number.

- **Input**: `6`
- **Output**: `13` (The 6th prime number is 13)

23. Find the Largest Prime Factor of a Number

Write a program to find the largest prime factor of a number.

- **Input**: `28`
- **Output**: `7`

24. Check if a Number is Deficient, Perfect, or Abundant

Write a program to classify a number as deficient, perfect, or abundant.

- **Input**: `12`
- **Output**: `Abundant` (Sum of divisors is 16, greater than 12)

25. Power of a Number

Write a program to calculate the result of a number raised to a certain power (exponentiation).

- **Input**: `2`, `5`
- **Output**: `32` (2^5 = 32)

26. Number of Trailing Zeros in Factorial

Write a program to count the number of trailing zeros in the factorial of a number.

- **Input**: `10!`
- **Output**: `2` (10! = 3628800, so there are 2 trailing zeros)

27. Find the Digital Root

Write a program to calculate the digital root of a number (the single-digit sum of its digits after repeated summing).

- **Input**: `456`
- **Output**: `6` (4 + 5 + 6 = 15, 1 + 5 = 6)

28. Calculate the Square Root of a Number (Without Library Functions)

Write a program to calculate the square root of a number using a numerical method like Newton's method.

- **Input**: `25`
- **Output**: `5`

29. Find the Number of Factors of a Number

Write a program to find how many factors a number has.

- **Input**: `36`
- **Output**: `9` (Factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, 36)

30. Check if a Number is a Strong Number

A strong number is a number whose sum of the factorial of its digits equals the number itself. Write a program to check if a number is a strong number.

- **Input**: `145`
- **Output**: `True` (1! + 4! + 5! = 145)