Basic Maths Assignment Questions

1. Count digits in a number

Problem Statement: Given an integer N, return the number of digits in N.
Examples

Example 1:
Input: N = 12345

Output: 5

Explanation: The number 12345 has 5 digits.

Example 2:
Input: N = 7789

Output: 4

Explanation: The number 7789 has 4 digits.

2. Check if a number is Palindrome or Not

Problem Statement: Given an integer N, return true if it is a palindrome else return false.

A palindrome is a number that reads the same backward as forward. For example, 121, 1331, and 4554 are palindromes because they remain the same when their digits are reversed.
Examples

Example 1:
Input : N = 4554

Output: Palindrome Number

Explanation: The reverse of 4554 is 4554 and therefore it is palindrome number

Example 2:
Input:N = 7789

Output: Not Palindrome

Explanation: The reverse of number 7789 is 9877 and therefore it is not palindrome

3. Find GCD of two numbers

Problem Statement: Given two integers N1 and N2, find their greatest common divisor.

The Greatest Common Divisor of any two integers is the largest number that divides both integers.
Examples

Example 1:
Input:N1 = 9, N2 = 12

Output:3
Explanation: Factors of 9: 1, 3 and 9
Factors of 12: 1, 2, 3, 4, 6, 12
Common Factors: 1, 3 out of which 3 is the greatest hence it is the GCD.

Example 2:
Input:N1 = 20, N2 = 15

Output: 5
Explanation: Factors of 20: 1, 2, 4, 5
Factors of 15: 1, 3, 5
Common Factors: 1, 5 out of which 5 is the greatest hence it is the GCD.

4. Check if a number is Armstrong Number or not

Problem Statement: Given an integer N, return true it is an Armstrong number otherwise return false.

An Amrstrong number is a number that is equal to the sum of its own digits each raised to the power of the number of digits.
Examples

Example 1:
Input:N = 153

Output: True

Explanation: $1^3+5^3+3^3 = 1 + 125 + 27 = 153$

Example 2:
Input:N = 371

Output: True

Explanation: $3^3+5^3+1^3 = 27 + 343 + 1 = 371$

5. Print all Divisors of a given Number

Problem Statement: Given an integer N, return all divisors of N.

A divisor of an integer N is a positive integer that divides N without leaving a remainder. In other words, if N is divisible by another integer without any remainder, then that integer is considered a divisor of N.

Examples

Example 1:
Input: N = 36

Output: [1, 2, 3, 4, 6, 9, 12, 18, 36]

Explanation: The divisors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, 36.

Example 2:
Input: N =12

Output: [1, 2, 3, 4, 6, 12]

Explanation: The divisors of 12 are 1, 2, 3, 4, 6, 12.

6. Check if a number is prime or not

Problem Statement: Given an integer N, check whether it is prime or not. A prime number is a number that is only divisible by 1 and itself and the total number of divisors is 2.

Examples

Example 1:
Input : N = 2

Output: True

Explanation: 2 is a prime number because it has two divisors: 1 and 2 (the number itself).

Example 2:
Input: N = 10

Output: False

Explanation: 10 is not prime, it is a composite number because it has 4 divisors: 1, 2, 5 and 10.