

Assignment Questions 9



Question 1

Given an integer `n`, return `true` if it is a power of two. Otherwise, return `false`.

An integer `n` is a power of two, if there exists an integer `x` such that `n == 2x`.

Example 1:

Input: `n = 1`

Output: `true`

Example 2:

Input: `n = 16`

Output: `true`

Example 3:

Input: `n = 3`

Output: `false`



Question 2

Given a number `n`, find the sum of the first natural numbers.

Example 1:

Input: `n = 3`

Output: `6`

Example 2:

Input : `5`

Output : `15`

Question 3

Given a positive integer, N. Find the factorial of N.

Example 1:

Input: N = 5

Output: 120

Example 2:

Input: N = 4

Output: 24

Question 4

Given a number N and a power P, the task is to find the exponent of this number raised to the given power, i.e. N^P .

Example 1 :

Input: N = 5, P = 2

Output: 25

Example 2 :

Input: N = 2, P = 5

Output: 32

Question 5

Given an array of integers arr, the task is to find maximum element of that array using recursion.

Example 1:

Input: arr = {1, 4, 3, -5, -4, 8, 6};

Output: 8

Example 2:

Input: arr = {1, 4, 45, 6, 10, -8};

Output: 45

Question 6

Given first term (a), common difference (d) and a integer N of the Arithmetic Progression series, the task is to find Nth term of the series.

Example 1:

Input : $a = 2$ $d = 1$ $N = 5$

Output : 6

The 5th term of the series is : 6

Example 2:

Input : $a = 5$ $d = 2$ $N = 10$

Output : 23

The 10th term of the series is : 23

Question 7

Given a string S, the task is to write a program to print all permutations of a given string.

Example 1:

Input:

$S = "ABC"$

Output:

$"ABC", "ACB", "BAC", "BCA", "CBA", "CAB"$

Example 2:

Input:

$S = "XY"$

Output:

$"XY", "YX"$



Question 8

Given an array, find a product of all array elements.

Example 1:

Input : arr[] = {1, 2, 3, 4, 5}

Output : 120

Example 2:

Input : arr[] = {1, 6, 3}

Output : 18