

Problem on CPP loops-2

Assignment Questions



Q1 - Write a program to calculate the factorial of a number.

(Easy)

Explanation : Factorial of any number n is represented by $n!$ and is equal to $1*2*3*...*(n-1)*n$.

E.g.-

$$4! = 1*2*3*4 = 24$$

$$3! = 3*2*1 = 6$$

Also,

$$1! = 1$$

$$0! = 0$$

Q2 - Write a program to print all Armstrong numbers between 100 to 500.

(Easy)

Explanation : A three digit number is called the Armstrong number if the sum of the cube of its digit is equal to the number itself.

E.g.- 153 is an Armstrong number because $(1^3) + (5^3) + (3^3) = 153$.

Sample Input : Already mentioned (100 to 500)

Sample Output :

0

1

153

370

371

407

Q3 - Write a program to find the sum of n natural numbers.

(Medium)

Sample Input : 5

Sample Output : 15

Q4 - Write a program to reverse a given integer number.

(Medium)

Sample Input : 538

Sample Output : 835

Q5 - Write a program to print the cross pattern given below (in the shape of X):

(Medium)

* *

* *

*

* *

* *

Q6- Write a program to print alphabet diamond pattern:

(Hard)

A

ABC

ABCDE

ABCDEF

ABCDEFGH

ABCDEF

ABCDE

ABC

A

Q7- Write a program to print + pattern given below :

(Medium)

```
*
*
*****
*
*
```

Q8 - Write a C++ program to print a triangle of prime numbers upto given number of lines of the triangle.

Sample input : Please enter the no of lines 6

Sample output :

```
2
3 5
7 11 13
17 19 23 29
31 37 41 43 47
53 59 61 67 71 73
```

Q9- Write a C++ program to check whether a Number can be expressed as a Sum of Two Prime Numbers. (Hard)

Eg. **Sample Input** - Enter a +ve Integer : 14

Sample Output -

```
14 = 3 + 11
14 = 7 + 7
```

Q10- Write a C++ program to print a rectangle out of *

Sample Input :

Please Enter the number of StarRows:

2

Please Enter the number of StarColumns:

3

Sample Output :

```
* * *
* * *
```