1. Write a C program to check whether a given integer is prime or not.

---

2. Write a C program to check whether the input character is vowel or consonant. You should consider both upper case and lower case characters.

---

3. Write a C program which takes input of an integer number between 0 to 15, and prints the binary of the number.

---

4. Write a C program to check whether a triangle is acute-angled, right-angled, or obtuse-angled. The input would be lengths of three sides of the triangle. Your code should do the following: - store the lengths in three floating-point variables: x, y, z; - check whether the input satisfies the triangle inequality property, i.e., max(x,y,z) is less than the sum of the other two sides; - do necessary checking and print the type of the triangle in the terminal.

---

5. Write a C program which will check if a given number is a perfect number or not. A perfect number is a number whose summation of factors (excluding itself) is equal to the number itself.

Example:

```
6 is a perfect number
factors of 6 = 1,2,3
1+2+3 = 6

28 is a perfect number
factors of 6 = 1,2,4,7,14
1+2+4+7+14 = 6
```

---

6. Write a C program which will take a hexadecimal number as input and return the corresponding decimal equivalent of the number. It should give proper output if it's an invalid number.

Example

```
Input  : EB41
Output : 60225

Input  : 43F2
Output : 17394

Input  : 4LOL4
Output : Invalid number!
```

---

7. Write a C program which will find the roots of a quadratic equation of the format ax^2 + bx + c = 0
Take inputs as a, b, and c.
Give outputs for all possible cases.
Your program should not give run-time error for any type of input

Example
Input:
a = 2, b = 3, c = 1

Output:
Roots are -1 and -0.5

---

8. Write a C program to check if a number is an Armstrong Number or not. An Armstrong number is one in which the sum of the cubes of its digits is equal to the original number. Ex: 371 = 3*3*3 + 7*7*7 + 1*1*1.

9.Write a C program to find out the GCD of two numbers.

---

10. Write a C program to display the prime numbers between a given range.

---

11. Write a C program to display a pyramid structure as follows:

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

---

12. Write a C program to calculate your monthly electric bill. The Rate table is shown below. The total amount will be calculated based on the energy charges along with fixed meter rent of Rs.50.

Monthly Consumption Rate(P)
First 25U 489
Next 35U 540
Next 40U 641
Next 50U 716
Next 150U 733
After 300U 892

Input: Monthly Unit Consumed = 163 U
Output: Rs. 1070.94

1070.94 = (25*4.89) + (35*5.40) + (40*6.41) + (50*7.16) + (13*7.33) + 50.00

---

13. You have a prepaid cellphone connection. The service provider provides you a rate cutter chart as shown below. You know your general weekly phone usage. Write a C program to determine which plan is mostly suitable for you (based on 28days usage).

PlanName MRP(Rs.) Validity(Days) PlanDetails
SecondPlan 38 28 All Calls @ 1.2p/2s
MinutePlan 29 28 All Calls 30p/min
UnlimitedPlan 147 28 Unlimited Calling Same Network, Other Network 300 Minutes free, thereafter Rs.1.20/min.

Input: Weekly Same Network Calling => No of call = 13, Avg Duration/Call = 139sec
Weekly Other Network Calling => No of call = 10, Avg Duration/Call = 49sec
Output: MinutePlan

SecondPlan = Rs.93.13 = ((13*139*4)+(10*49*4))*0.006 + 38
MinutePlan = Rs. 87.80 = ((13*3*4)+(10*1*4))*0.3 + 29
UnlimitedPlan = Rs. 147

---

14. Write a C program to generate in words of any two digit values between 20 to 99.

Input: 99
Output: Ninety nine

Input: 30
Output: Thirty

---

15. Write a C program to find the LCM of two numbers.

---

16. Write a C program to find the largest number among n numbers.

---

17. In an examination of a subject the grades are given as follows:-

Above 90 => A
80-89 => B
70-79 => C
60-69 => D
Below 60 => E

Write a C program which will take marks as input of n students

and provide grades as output.

---

18. Write a C program which will find the centre and the radius of a circle of the format x^2 + y^2 + 2gx + 2fy + c = 0
Take inputs as g, f and c. Give outputs for all possible cases.

---

19. Write a C program to print Fibonacci series up to n terms.

---

20. Write a C program to swap the first and last digit of any number. The given number is in the range of integer in C.

---

21. Write a C program to print alphabets from a to z and A to Z using loops.

---

22. Print the pattern using loops:

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

---

23. Write a C program to convert Hexadecimal number to Octal number.

---

24. Write a C program to convert days into years, weeks and days.

---

25. Given some numbers , find the second largest number in that series.

---

26. Given a number , count the number of digits which are 2. for e.g.
In 23232 -> ans: 3 , In 22221 -> ans 4 , In 22222 -> ans : 5 , in 9090 ans : 0

---

27. Given a number , reverse it and print it.
   For eg 8897 becomes 7988
