Home Practice Problems:

1. Take values of length and breadth of a rectangle from the user and check if it is square or not.

2. Take two int values from the user and print the greatest among them.

3. A shop will give a discount of 10% if the cost of the purchased quantity is more than 1000. Ask the user for quantity. Suppose, one unit will cost 100. Judge and print total cost for the user.

4. A company decided to give a bonus of 5% to the employee if his/her year of service is more than 5 years. Ask users for their salary and year of service and print the net bonus amount.

5. A school has the following rules for the grading system:
   a. Below 25 - F
   b. 25 to 45 - E
   c. 45 to 50 - D
   d. 50 to 60 - C
   e. 60 to 80 - B
   f. Above 80 - A
   Ask the user to enter marks and print the corresponding grade.

6. Take input of age of 3 people by the user and determine oldest and youngest among them.

7. Write a program to print the absolute value of a number entered by the user. E.g.-
   INPUT: 1   OUTPUT: 1
   INPUT: -1   OUTPUT: 1

8. A student will not be allowed to sit in an exam if his/her attendance is less than 75%. Take the following input from the user Number of classes held. A number of classes attended. And the print percentage of class attended Is student is allowed to sit in exam or not.

9. Modify the above question to allow the student to sit if he/she has a medical cause. Ask the user if he/she has a medical cause or not ('Y' or 'N') and print accordingly.

10.
If
x = 2
y = 5
z = 0
then find values of the following expressions:
a. x == 2
b. x != 5
c. x != 5 && y >= 5
d. z != 0 || x == 2
e. !(y < 10)

11. Write a program to check whether an entered character is lowercase (a to z) or uppercase (A to Z).

12. Write a C++ program to accept two integers and check whether they are equal or not.

Test Data: 15 15

Expected Output:

Number1 and Number2 are equal

13. Write a C++ program to check whether a given number is even or odd.

Test Data: 15

Expected Output:

15 is an odd integer

14. Write a   c++program to check whether a given number is positive or negative.

Test Data: 15

Expected Output:

15 is a positive number

15. Write a   c++program to find whether a given year is a leap year or not.

Test Data: 2016

Expected Output :

2016 is a leap year.

16. Write a   c++program to read the age of a candidate and determine whether it is eligible for casting his/her own vote.

Test Data: 21

Expected Output:

Congratulation! You are eligible for casting your vote.

17**.** Write a c++program to read the value of an integer m and display the value of n as 1 when m is larger than 0, 0 when m is 0, and -1 when m is less than 0.

Test Data : -5

Expected Output :

The value of n = -1

18**.** Write a c++program to accept the height of a person in centimeters and categorize the person according to their height.

Test Data: 135

Expected Output:

The person is a Dwarf.

19**.** Write a c++program to find the largest of three numbers.

Test Data: 12 25 52

Expected Output :

1st Number = 12,   2nd Number = 25,   3rd Number = 52

The 3rd Number is the greatest among the three

20**.** Write a c++program to accept a coordinate point in an XY coordinate system and determine in which quadrant the coordinate point lies.

Test Data: 7 9

Expected Output:

The coordinate point (7,9) lies in the first quadrant.

21**.** Write a c++program to find the eligibility of admission for a professional course based on the following criteria:

Eligibility Criteria: Marks in Maths >=65 and Marks in Phy >=55 and Marks in Chem>=50 and Total in all three subjects >=190 or Total in Maths and Physics >=140
------------------------------------ Input the marks obtained in Physics:65 Input the marks obtained in

Chemistry:51 Input the marks obtained in Mathematics:72 Total marks of Maths, Physics and Chemistry: 188 Total marks of Maths and Physics: 137 The candidate is not eligible.

Expected Output:

The candidate is not eligible for admission.

22. Write a c++program to calculate the root of a Quadratic c++Equation.

Test Data: 1 5 7

Expected Output:

Roots are imaginary;

12. Write a c++program to read roll no, name, and marks of three subjects and calculate the total, percentage, and division.

Test Data:

Input the Roll Number of the student:784

Input the Name of the Student: James

Input the marks of Physics, Chemistry and Computer Application: 70 80 90

Expected Output:

Roll No: 784

Name of Student: James

Marks in Physics: 70

Marks in Chemistry: 80

Marks in Computer Application: 90

Total Marks = 240

Percentage = 80.00

Division = First

23. Write a c++program to read the temperature in centigrade and display a suitable message according to the temperature state below:

Temp < 0 then Freezing weather

Temp 0-10 then Very Cold weather

Temp 10-20 then Cold weather

Temp 20-30 then Normal in Temp

Temp 30-40 then It's Hot

Temp >=40 then It's Very Hot

Test Data:

42

Expected Output:

It's very hot.

24. Write a   c++program to check whether a triangle is Equilateral, Isosceles, or Scalene.

Test Data:

50 50 60

Expected Output:

This is an isosceles triangle.

25. Write a   c++program to check whether a triangle can be formed by the given value for the angles.

Test Data:

40 55 65

Expected Output:

The triangle is not valid.

26. Write a   c++program to check whether a character is an alphabet, digit, or special character.

Test Data:

@

Expected Output:

This is a special character.

27. Write a   c++program to check whether an alphabet is a vowel or consonant.

Test Data:

k

Expected Output:

The alphabet is a consonant.

28**.** Write a   c++program to calculate profit and loss on a transaction.

Test Data:

500 700

Expected Output:

You can be booked your profit amount: 200

29**.** Write a program in   c++to calculate and print the Electricity bill of a given customer. The customer id., name, and unit consumed by the user should be taken from the keyboard and display the total amount to pay to the customer. The charge is as follow:

Unit	Charge/unit
upto 199	@1.20
200 and above but less than 400	@1.50
400 and above but less than 600	@1.80
600 and above	@2.00

If the bill exceeds Rs. 400 then a surcharge of 15% will be charged and the minimum bill should be Rs. 100/-

Test Data:

1001

James

800

Expected Output:

Customer IDNO:1001

Customer Name: James

unit Consumed:800

Amount Charges @Rs. 2.00 per unit: 1600.00

Surcharge Amount: 240.00

Net Amount Paid By the Customer: 1840.00

29. Write a program in c++to accept a grade and declare the equivalent description:

Grade	Description
E	Excellent
V	Very Good
G	Good
A	Average
F	Fail

Test Data :

Input the grade :A

Expected Output :

You have chosen : Average

30. Write a program in c++to to read any day number in integer and display the day name in the word.

Test Data :

4

Expected Output :

Thursday

31. Write a program in c++to to read any digit, display it in word.

Test Data :

4

Expected Output :

Four

32. Write a program in c++to to read any Month Number in integer and display the Month name in the word.

Test Data :

4

Expected Output :

April

33**.** Write a program in   c++to to read any Month Number in integer and display the number of days for this month.

Test Data :

7

Expected Output :

Month have 31 days

34**.** Write a program in   c++which is a Menu-Driven Program to compute the area of the various geometrical shape.

Test Data :

1

5

Expected Output :

The area is: 78.500000

35**.** Write a program in   c++which is a Menu-Driven Program to perform a simple calculation.

Test Data :

10

2

3

Expected Output :

The Multiplication of 10 and 2 is: 20