1.Take 2 integers input and print the greatest of them

main.cpp — Run — Output

```cpp
#include <iostream>
using namespace std;

int main() {
    int a,b;
    cout<<"enter first number : ";
    cin>>a;
    cout<<"enter second number : ";
    cin>>b;
    if(b>a){
        cout<<b<<"is greatest.";
    }
    else{
        cout<<a<<"is greatest.";
    }
}
```

```
/tmp/dVMqb3tyML.o
enter first number : 3453
enter second number : 56654
56654is greatest.

=== Code Execution Successful ===
```

2. Given the radius of the circle, predict whether numerically the area of this circle is larger than the circumference or not.

main.cpp — Run — Output

```cpp
#include <iostream>
using namespace std;

int main() {
    float a,p;
    float r;
    cout<<"enter radius :";
    cin>>r;
    float pi = 3.14;
    a = pi*(r*r);
    p = 2*pi*r;

    if(p>a){
        cout<<"circumference is greater than area.";
    }
    else{
        cout<<"area is greater than circumference.";
    }
}
```

```
/tmp/X2MwOKx0I6.o
enter radius :4
area is greater than circumference.

=== Code Execution Successful ===
```

3. Any year is input through the keyboard. Write a program to determine whether the year is a leap year or not. (Considering leap year occurs after every 4 years).

main.cpp — Run — Output

```cpp
#include <iostream>
using namespace std;

int main() {
    int year;
    cout<<"enter your year: ";
    cin>>year;
    if((year%4)==0){
        cout<<"it is a leap year.";
    }
    else{
        cout<<"it is not a leap year.";
    }
}
```

```
/tmp/OwT8OZNCVq.o
enter your year: 2003
it is not a leap year.

=== Code Execution Successful ===
```

4.Given the length and breadth of a rectangle, write a program to find whether numerically the area of the rectangle is greater than its perimeter.

main.cpp

Run

Output

```cpp
#include <iostream>
using namespace std;

int main() {
    float l,b;
    cout<<"enter length :";
    cin>>l;
    cout<<"enter breadth :";
    cin>>b;
    float a = l*b;
    float p = 2*(l+b);

    if(a>p){
        cout<<"Area is greater than perimeter.";
    }
    else{
        cout<<"Perimeter is greater than area.";
    }
}
```

```
/tmp/uKIlDROJQI.o
enter length :5
enter breadth :7
Area is greater than perimeter.

=== Code Execution Successful ===
```

5. Write a program to input sides of a triangle and check whether a triangle is equilateral, scalene or isosceles triangle.

main.cpp

Run

Output

```cpp
#include <iostream>
using namespace std;

int main() {
    int side1, side2, side3;
    cout << "Enter the lengths of the three sides of the triangle:" << endl;
    cout << "Side 1: ";
    cin >> side1;
    cout << "Side 2: ";
    cin >> side2;
    cout << "Side 3: ";
    cin >> side3;

    if (side1 == side2 && side2 == side3) {
        cout << "The triangle is equilateral." << endl;
    } else if (side1 == side2 || side2 == side3 || side1 == side3) {
        cout << "The triangle is isosceles." << endl;
    } else {
        cout << "The triangle is scalene." << endl;
    }
}
```

```
/tmp/fmwNeGA5H3.o
Enter the lengths of the three sides of the triangle:
Side 1: 5
Side 2: 4
Side 3: 4
The triangle is isosceles.


=== Code Execution Successful ===
```

6.If the marks of A, B and C are input through the keyboard, write a program to determine the student scoring the least marks.

main.cpp

Run

Output

```cpp
#include <iostream>
using namespace std;

int main() {
    int marksA, marksB, marksC;
    cout << "Enter the marks of student A: ";
    cin >> marksA;
    cout << "Enter the marks of student B: ";
    cin >> marksB;
    cout << "Enter the marks of student C: ";
    cin >> marksC;

    if (marksA <= marksB && marksA <= marksC) {
        cout << "Student A has the least marks with " << marksA << " marks." <<
            endl;
    } else if (marksB <= marksA && marksB <= marksC) {
        cout << "Student B has the least marks with " << marksB << " marks." <<
            endl;
    } else {
        cout << "Student C has the least marks with " << marksC << " marks." <<
            endl;
    }
}
```

```
/tmp/oiblhHFeZC.o
Enter the marks of student A: 23
Enter the marks of student B: 34
Enter the marks of student C: 71
Student A has the least marks with 23 marks.


=== Code Execution Successful ===
```

7. Given a point (x, y), write a program to find out if it lies on the x-axis, y-axis or at the origin, viz. (0, 0).

main.cpp

Run

```cpp
#include <iostream>
using namespace std;

int main() {
    int x, y;
    cout << "Enter the x-coordinate of the point: ";
    cin >> x;
    cout << "Enter the y-coordinate of the point: ";
    cin >> y;
    if (x == 0 && y == 0) {
        cout << "The point (" << x << ", " << y << ") lies at the origin." <<
            endl;
    } else if (x == 0) {
        cout << "The point (" << x << ", " << y << ") lies on the y-axis." <<
            endl;
    } else if (y == 0) {
        cout << "The point (" << x << ", " << y << ") lies on the x-axis." <<
            endl;
    } else {
        cout << "The point (" << x << ", " << y << ") does not lie on the x-axis,
            y-axis, or at the origin." << endl;
    }
}
```

Output

```
/tmp/ZmIdWjRXOW.o
Enter the x-coordinate of the point: 2
Enter the y-coordinate of the point: 0
The point (2, 0) lies on the x-axis.


=== Code Execution Successful ===
```

8.Given three points (x1, y1), (x2, y2) and (x3, y3), write a program to check if all the three points fall on one straight line.

main.cpp

Run

```cpp
#include <iostream>
using namespace std;

int main() {
    int x1, y1, x2, y2, x3, y3;

    cout << "Enter the coordinates of the first point (x1, y1): ";
    cin >> x1 >> y1;
    cout << "Enter the coordinates of the second point (x2, y2): ";
    cin >> x2 >> y2;
    cout << "Enter the coordinates of the third point (x3, y3): ";
    cin >> x3 >> y3;

    if ((x2 - x1) * (y3 - y2) == (y2 - y1) * (x3 - x2)) {
        cout << "All 3 points lie on the same line.";
    }
    else {
        cout <<"All 3 points do not lie on the same line.";
    }
}
```

Output

```
/tmp/XXInySXZ44.o
Enter the coordinates of the first point (x1, y1): 1 1
Enter the coordinates of the second point (x2, y2): 2 2
Enter the coordinates of the third point (x3, y3): 3 3
All 3 points lie on the same line.

=== Code Execution Successful ===
```

9.Write a C++ program to input any character and check whether it is the alphabet, digit or special character.

```cpp
#include <iostream>
using namespace std;

int main() {
    char ch;
    cout << "Enter any character: ";
    cin >> ch;

    if ((ch >= 'A' && ch <= 'Z') || (ch >= 'a' && ch <= 'z')) {
        cout << "alphabet." << endl;
    }
    else if (ch >= '0' && ch <= '9') {
        cout << "digit." << endl;
    }
    else {
        cout << "special character." << endl;
    }
}
```

```
/tmp/zZ3xlT85YN.o
Enter any character: 9
digit.


=== Code Execution Successful ===
```

10.Predict the output of the below code:

main.cpp

Run

Output

```cpp
#include<iostream>
using namespace std;
int main() {
int a = 500, b, c;
if (a >= 400)
b = 300;
c = 200;
cout << "value of b and c are respectively " << b << " and " << c;
return 0;
}
```

```
/tmp/cvO5RtiYnX.o
value of b and c are respectively 300 and 200

=== Code Execution Successful ===
```