1

Triangle Classification

Triangle classification is an important problem in modern mathematics. Mathematicians have developed many criteria according to which a triangle can be classified. In this problem, you will be asked to classify some triangles according to their sides and angles.

According to their sides, triangles may be:

- **Scalene:** All sides are different
- **Isosceles:** Exactly two sides are equal
- **Equilateral:** All sides are equal

According to their angles, triangles may be:

- **Acute:** All angles are acute (less than 90 degrees)
- **Right:** One angle is right (90-degrees angle)
- **Obtuse:** One angle is obtuse (greater than 90 degrees)

Write a C program that takes input six floating point numbers **x1, y1, x2, y2, x3** and **y3** denoting Cartesian coordinates of points, that form the triangle to be classified. Then classify the triangle as "Equilateral," "Isosceles," "Scalene," or "Invalid" based on its side lengths calculated from the coordinates.

Sample Input	Sample Output
0 0 1 1 1 2	Scalene obtuse triangle
3 0 0 4 4 7	Isosceles right triangle
-4 0 4 0 0 6.928	Equilateral acute triangle
1 1 1 2 1 3	Invalid

2

Gradesheet Generator

Write a c program that will find the grade of N students. For each student, it will take the marks of his/her the attendance (on 5 marks), assignment (on 10 marks), class test (on 15 marks), midterm (on 50 marks), term final (on 100 marks). Then based on the tables shown below, the program will output his grade.

Attendance (A)	5%
Assignments (HW)	10%
Class Tests (CT)	15%
Midterm (MT)	30%
Final (TF)	40%

Marks	Letter Grade	Marks	Letter Grade	Marks	Letter Grade
90-100	A	70-73	C+	<55	F
86-89	A-	66-69	C		
82-85	B+	62-65	C-		
78-81	B	58-61	D+		
74-77	B-	55-57	D		

Sample Input	Sample Output
3 5, 10, 15, 44.5, 92.5 0, 7.5, 5, 20, 55.5 3, 6, 10, 34, 66.5	 Student 1 : A Student 2 : F Student 3: C