

**Problem #1**  
**(10 marks = 5 + 5)**

1. Write a `Line` class that contains the value of  $m$  and  $c$  if we represent a line in the form  $y = mx + c$ . Assume that all the member variables are integers. Also write a constructor that takes the values of  $m$  and  $c$  as parameters and assigns them accordingly.
2. Write an `Angle` Class that contains two member variables of type `Line`.

If you need getters and setters, you need to write them too. Also you must follow object oriented practices.

**Problem #2**  
**(10 marks)**

Write a member function `double angleBetween()`, which returns the absolute measure in degree of the acute angle between the two lines of the caller `Angle`. Write a main function to read 4 integers. The first 2 integers indicate the value of  $m$  and  $c$  of the first line. The next 2 integers represent the value of  $m$  and  $c$  of the second line. Using the Classes defined in Problem 1 and the function, print the angle between the two lines.

Sample Input	Sample Output
0 0 1 0	45.00
3 5 -4 10	32.49
1 10 -1 20	90.00

**Problem #3**  
**(Bonus)(10 marks)**

Write a member function `int isBisector(Line l)`, which returns 1 if the the Line l bisects the caller Angle. Write a main function to read 6 integers. The first 2 integers indicate the value of m and c of the first line. The next 2 integers represent the value of m and c of the second line of the angle. Finally the last two integers corresponds to the m and c of the line. Using the Classes defined in Problem 1 and the function in problem 2 and 3, print whether the third line bisects the angle between the former two lines.

Sample Input	Sample Output
1 20 -1 10 0 15	Bisector
1 5 -1 10 1 10	Not Bisector