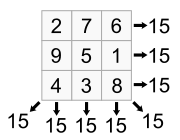
2. (20 scores) A **complex number** is a number which is the sum of a real number and an imaginary number. It has an expression of the form “ *a* + *bi* ”in which *a* is the real part and *bi* is the imaginary part. Create a class called ComplexNum that includes two pieces of information as data members—two real numbers which represent real and imaginary parts respectively. Your class should have a constructor, set functions, get functions, mod function and print function which outputs the complex number in the form of “*a* + *bi*”. Write a test program that input parameters of two complex numbers, define two objects of ComplexNum, print these two complex numbers in the form of “*a* + *bi*”, compare the mod of these two complex numbers and display the result. (By separating interface from implementation)

**Tip**: the mod of a complex number *a* + *bi* is equal to*.*

3. (20 scores) In mathematics, a **magic square** of order *n* is an arrangement of *n*2 numbers, usually distinct integers, in a square, such that the *n* numbers in all rows, all columns, and both diagonals sum to the same constant. For example, the following 3\*3 matrix is a magic square of order 3,



Develop a program to validate if the given matrix is a magic square. Output the summation of all rows, columns and both diagonals and validate if the given matrix is magic matrix. Like this:

Summation of row 1 is

Summation of row 2 is

...

Summation of column 1 is

Summation of column 2 is

...

Summation of diagonal 1 is

Summation of diagonal 2 is

This matrix is a magic matrix! /or This matrix is not a magic matrix!

Two given matrices are two 4\*4 matrices which are int m1[4][4] = {16, 2, 3, 13, 5, 11, 10, 8, 9, 7, 6, 12, 4, 14, 15, 1} and int m2[4][4] = {10, 9, 5, 11, 2, 13, 16, 7, 8, 4, 6, 15, 4, 11, 3, 1} respectively.