1. **Problem statement:**

To define a new class called complex to represent a complex number. The users can input complex numbers and make calculations (add, subtract, multiple and divide) through the functions of class. The data members of the class complex are two fractions, denoting the real part and imaginary part, respectively.

1. **Analysis:**

Inputs: two fractions representing the real part and imaginary part of a complex number

Outputs: the results of addition, subtraction, multiplication, division between two complex numbers

Additional requirements: must define a class called complex to achieve the goals.

1. **Design:**

Class definition

1. First include the class fraction
2. Define two fractions representing real part and imaginary part
3. Define a default constructor and a normal constructor
4. Define input function and output function by using input and output function of class fraction
5. Define function add, subtract, multiple, divide and compare, which are of type complex and return the result as complex numbers. Use functions of class fraction to do calculations between fractions.

Main function

1. declare six variables of type fraction
2. ask user to choose input two complex numbers
3. store the input as complex type F1 and F2
4. make calculations and display the four results of addition, subtraction, multiplication and division

**4. Implementation**: see C++ code in file 1405347\_2-3.cpp with comments.

**5. Testing:**

The C++ program was tested by carrying out a set of experiments and the C ++program output was verified successfully. For example

