**Java Problem Lists**

1. A shop will give a discount of 10% if the cost of purchased quantity is more than 1000.  
   Ask the user for quantity  
   Suppose, one unit will cost 100.  
   Judge and print total cost for user.
2. A school has the following rules for the grading system:  
   a. Below 25 - F  
   b. 25 to 45 - E  
   c. 45 to 50 - D  
   d. 50 to 60 - C  
   e. 60 to 80 - B  
   f. Above 80 - A  
   Ask the user to enter marks and print the corresponding grade.
3. A 4-digit number is entered through keyboard. Write a program to print a new number with digits reversed as of original one. E.g.-  
   INPUT : 1234        OUTPUT: 4321  
   INPUT : 5982        OUTPUT: 2895
4. Take integer inputs from user until he/she presses q (Ask to press q to quit after every integer input). Print average and product of all numbers.
5. Write a program to find prime factor of a number.  
   If a factor of a number is a prime number, then it is its prime factor.
6. Define a method to find out if number is prime or not.
7. Take 20 integer inputs from user and print the following:  
   number of positive numbers  
   number of negative numbers  
   number of odd numbers  
   number of even numbers  
   number of 0s.
8. Write a program to print the area of two rectangles having sides (4,5) and (5,8) respectively by creating a class named 'Rectangle' with a method named 'Area' which returns the area and length and breadth passed as parameters to its constructor.
9. Write a program to print the area of a rectangle by creating a class named 'Area' taking the values of its length and breadth as parameters of its constructor and having a method named 'returnArea' which returns the area of the rectangle. Length and breadth of rectangle are entered through keyboard.
10. Take as input a fraction in the form a/b. Convert the same into lowest terms and print. (Lowest terms examples 3/12 = 1/4).
11. Print the sum, difference and product of two complex numbers by creating a class named 'Complex' with separate methods for each operation whose real and imaginary parts are entered by user.
12. Create a class named 'Member' having the following members:  
    Data members  
    1 - Name  
    2 - Age  
    3 - Phone number  
    4 - Address  
    5 - Salary  
    It also has a method named 'printSalary' which prints the salary of the members.  
    Two classes 'Employee' and 'Manager' inherit the 'Member' class. The 'Employee' and 'Manager' classes have data members 'specialization' and 'department' respectively. Now, assign name, age, phone number, address and salary to an employee and a manager by making an object of both of these classes and print the same.
13. Write a program that takes your full name as input and displays the abbreviations of the first and middle names except the last name which is displayed as it is. For example, if your name is Robert Brett Roser, then the output should be R.B.Roser.