Core Java Assignments

Java Basics

1. Write a program that takes a String through Command Line argument and display the length of the string. Also display the string into uppercase and check whether it is a palindrome or not. (Refer Java API Documentation)
2. Write a program that accepts two numbers from the Command Line and prints them out. Then use a ***for loop*** to print the next 13 numbers in the sequence where each number is the sum of the previous two. For example:

```
input> java prob2 1 3
output> 1 3 4 7 11 18 29 47 76 123 322 521 843 1364
```

3. Write a program that accepts two numbers in the range from 1 to 40 from the Command Line. It then compares these numbers against a single dimension ***array*** of five integer elements ranging in value from 1 to 40. The program displays the message ***BINGO*** if the two inputted values are found in the array element. For example:

```
input>java prob3 3 29
output>Your first number was 3
Your second number was 29
Its Bingo! // this message if 3 and 29 is found in the array
Not Found! // this message if 3 and 29 is not found in the        //array
The array was 7 25 5 19 30
```

4. Write a program that allows you to create an integer ***array*** of 18 elements with the following values: ***int A[]={3,2,4,5,6,4,5,7,3,2,3,4,7,1,2,0,0,0}***. The program computes the sum of element 0 to 14 and stores it at element 15, computes the average and stores it at element 16 and identifies the smallest value from the array and stores it at element 17.

5. Create a program that calculates how much a $14,000 investment would be worth if it increased in value by 40% during the first year, lost $1,500 in value the second year, and increased 12% in the third year.

6. Write a program that displays two numbers and uses the / and % operators to display the result and remainder after they are divided. Use the \t character escape code to separate the result and remainder in your output.

7. Create a program that turns a birthday in MM/DD/YYYY format (such as 12/04/2007) into three individual strings.Display all values.

8. Create a class that takes words for the first 10 numbers ("one" up to "ten") and converts them into a single long integer. Use a switch statement for the conversion and command-line arguments for the words.

9. The distance between two cities (in km.) is input through the keyboard. Write a program to convert and print this distance in meters, feet, inches and centimeters. keyboard. Write a program to convert and print this distance in meters, feet, inches and centimeters.

10.If a four-digit number is input through the keyboard, write a program to obtain the sum of the first and last digit of this number.

11. A five-digit number is entered through the keyboard. Write a program to obtain the reversed number and to determine whether the original and reversed numbers are equal or not.

12. An Insurance company follows following rules to calculate premium.

(1) If a person's health is excellent and the person is between 25 and 35 years of age and lives in a city and is a male then the premium is Rs. 4 per thousand and his policy amount cannot exceed Rs. 2 lakhs.
(2) If a person satisfies all the above conditions except that the sex is female then the premium is Rs. 3 per thousand and her policy amount cannot exceed Rs. 1 lakh.
(3) If a person's health is poor and the person is between 25 and 35 years of age and lives in a village and is a male then the premium is Rs. 6 per thousand and his policy cannot exceed Rs. 10,000.
(4) In all other cases the person is not insured.

Write a program to output whether the person should be insured or not, his/her premium rate and maximum amount for which he/she can be insured. Display all values

13. A certain grade of steel is graded according to the following conditions:

(i) Hardness must be greater than 50
(ii) Carbon content must be less than 0.7

(iii) Tensile strength must be greater than 5600

The grades are as follows:

Grade is 10 if all three conditions are met
Grade is 9 if conditions (i) and (ii) are met
Grade is 8 if conditions (ii) and (iii) are met
Grade is 7 if conditions (i) and (iii) are met
Grade is 6 if only one condition is met
Grade is 5 if none of the conditions are met

Write a program, which will require the user to give values of hardness, carbon content and tensile strength of the steel under consideration and output the grade of the steel.
Dsiplay all values.

14. The policy followed by a company to process customer orders is given by the following rules:

(a) If a customer order is less than or equal to that in stock and has credit is OK, supply has requirement.
(b) If has credit is not OK do not supply. Send him intimation.
(c) If has credit is Ok but the item in stock is less than has order, supply what is in stock. Intimate to him data the balance will be shipped.

Write a program to implement the company policy. Display all values.