Exercise 1:

Write Java statements that accomplish each of the following tasks:

1. Display the message "Enter an integer: " leaving the cursor on the same line
2. Assign the product of variables b and c to variable a
3. Use a comment to state that a program performs a sample payroll calculation
4. Write a Java statement that assigns the double variable myDouble to the int variable myInteger

Exercise 2:

Write an application that displays the 1 to 4 on the same line, which pair of adjacent numbers separated by one space. Use the following techniques:

1. Use one System.out.println statement
2. Use four System.out.print statement
3. Use one System.out.println statement

Exercise 3:

What does the following code print?

System.out.println("*\n**\n***\n****\n*****");

Exercise 4:

Use the web to determine the current world population and the annual population growth rate. Write an application that inputs these values then displays the estimated world population after one, two, three, four and five years.

Exercise 5:

Write a program that calculates the energy needed to heat water from an initial temperature to final temperature. Your program should prompt the user to enter the amount of water in kilogrmas and the initial and final temperatures of the water. The formula to compute the energy:

Q = M * (finalTemperature – initailTemperature)4184

Where M is the weight of water in kilograms, temperatures are in degrees celsius, and energy Q is measured in joules. Here is a sample run:

Enter the initial temperature : 3,5

Enter the final temperature: 10,5

The energy needed is 1625484,0

Exercise 6

How cold is it outside? The temperature alone is not enough to provide the answer. Other factors including wind speed, relative humidity, and sunshine play important roles in determing coldness outside. In 2001, the National Weather Service (NWS) implemented the new wind-chill temperature the coldness using temperature and wind speed. The formula is

$t_{wc} = 35,74 + 0,6215t_a - 35,75v^{0,16} + 0,4275t_av^{0,16}$

where t_a is the temperature measured indegrees Fahrenheit and v is the speed measures in miles per hour, t_{wc} is the wind-chill temperature. The formula cannot be used for wind below 2 mph or temperature below -58 °F or above 41°F.

work required: write a program that programs the user to enter a temperature between -58°F or above 41°F and a wind speed greater than or equal to 2 and displays the wind-chill temperature.

Here is a sample run:

Enter the temperature in Fahrenheit: 5,3

Enter the wind speed in miles per hour: 6

The wind chill index is -5,56707

Exercise 7:

What does the following program print?

```
public class LastLaugh {
        public static vod main (String args[]) {
        System.out.print(''H'' + ''a'');
        System.out.print ('H' + 'a');
        }
}
```