PROG1003 & PROG1012

Programming Assignment 2: Elementary Programming

Name:

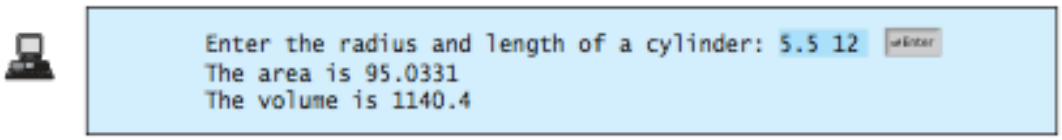
Student No:

1. Show the output of the following statements (write a program to verify your result):
   - System.out.println("1" + 1);
   - System.out.println('1' + 1);
   - System.out.println("1" + 1 + 1);
   - System.out.println("1" + (1 + 1));
   - System.out.println('1' + 1 + 1);

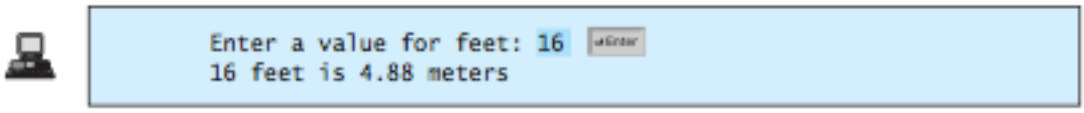
2. (Computing the volume of a cylinder) Write a program that reads in the radius and length of a cylinder and computes volume using the following formulas:

   area = radius * radius * π

   volume = area * length

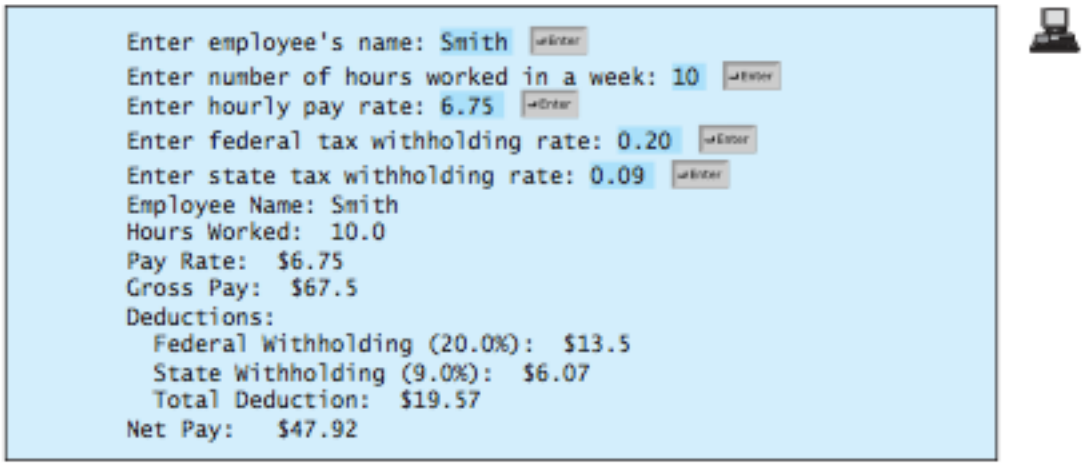


3. (Converting feet into meters) Write a program that reads a number in feet, converts it to meters, and displays the result. One foot is 0.305 meter. Here is a sample run:



4. (*Financial application: payroll*) Write a program that reads the following infor- mation and prints a payroll statement:
   Employee's name (e.g., Smith)Number of hours worked in a week (e.g., 10) Hourly pay rate (e.g., 6.75)Federal tax withholding rate (e.g., 20%) State tax withholding rate (e.g., 9%)

Write this program in two versions: (a) Use dialog boxes to obtain input and dis- play output; (b) Use console input and output. A sample run of the console input and output is shown below:



5. *(Health application: computing BMI)* Body Mass Index (BMI) is a measure of health on weight. It can be calculated by taking your weight in kilograms and dividing by the square of your height in meters. Write a program that prompts the user to enter a weight in pounds and height in inches and display the BMI. Note that one pound is **0.45359237** kilograms and one inch is **0.0254** meters. Here is a sample run: