**Problem Solving and Programming**

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**Assignment #2 Exercises**

1. **If u = 2, v = 3, w = 5, x = 7, and y = 11, what is the value of each of the following expressions, assuming int variables.**

u + v \* w + x = 24

u + y % v \* w + x = 19

u ++ / v + u ++ \* w = 15

1. **What changes to the ChangeMaker program in Listing 2.3 are necessary if it also accepts coins for one dollar and half a dollar?**

For the ChangeMaker to accept one dollar and half dollar coins then for one dollar you must minus the value from 100, and for the half dollar minus the value from 50. Then you will be able to calculate the value of quarters, dimes, nickels, and pennies.

1. **If the int variable x contains 10, what will the following Java statement display?**

**System.out.println(“Test 1” + x \* 3 \* 2.0);**

**System.out.println(“Test 2” + x \* 3 + 2.0);**

If the variable x contains 10 then the output of the first statement is 60.0 but the output of the second statement will be 302.0 because the value 2.0 is a float number. The float value behaves like an integer when being multiplied, but with addition it will behave like a string so it will be added after the product of two integer values.

**Given these results, explain why the following Java statement will not compile:**

**System.out.println(“Test 3” + x \* 3 – 2.0);**

The third statement will give an error because when using addition and subtraction the float number behaves like a string, and since the addition operator is used there is no operation for the subtraction operator so that is why it gives an error.

1. **Write a single Java statement that will display the words one, two, and three, each on its own line.**

System.out.println(“one\n” + “two\n” + “three\n”);

1. **What does the Java code display when the keyboard input is 2istheinput?**

**Scanner keyboard = new Scanner(System.in);**

**System.out.print(“Enter a string.”);**

**int n = keyboard.nextInt();**

**String s = keyboard.next();**

**System.out.println(“n is ” + n);**

**System.out.println(“s is ” + s);**

The code will give an error if you enter 2istheinput, because it thinks that is the integer. However, if you add spaces it will show both inputs and show it.

1. **What does the Java code display when the keyboard input is By theprickingof my thumbs?**

**Scanner keyboard = new Scanner(System.in);**

**keyboard.useDelimiter(“y”);**

**System.out.println(“Enter a string.”);**

**String a = keyboard.next();**

**String b = keyboard.next();**

**System.out.println(“a is” + a);**

**System.out.println(“b is” + b);**

The output that will be displayed is:

Enter a string

By theprickingof my thumbs

a is: B

b is: theprickingof my

1. **Repeat the previous exercise, but change next to nextLine in the statement that assigns a value to b.**

**Scanner keyboard = new Scanner(System.in);**

**keyboard.useDelimiter(“y”);**

**System.out.println(“Enter a string.”);**

**String a = keyboard.nextLine();**

**String b = keyboard.nextLine();**

**System.out.println(“a is” + a);**

**System.out.println(“b is” + b);**

The output that will be displayed is:

Enter a string

by theprickingof my thumbs

a is: b

b: y theprickingof my thumbs