CS-200-1: Programming I
Fall 2014
Northeastern Illinois University
In-Class Exercise: Numeric Variables & Operations

1. Determine the result of the following remainder operations:

(a) 56 % 6

(b) 78 % 4

(c) -34 % 5

(d) 34 % -5

(e) 5 % 1

(f) 1 % 5

2. Determine the result of the following mathematical expressions:

(a) $3 + 6 \times (5 + 4) \div 3 - 7$

(b) $9 - 5 \div (8 - 3) \times 2 + 6$

(c) $150 \div (6 + 3 \times 8) - 5$

3. Trace through the following code and determine the output that is printed to the console. (Hint: It may help to create a memory window to keep track of the changes to the variables.)

```
public class TracingProblem
{
    public static void main(String[] args)
    {
        int a = 6;
        int b = a + 1;
        System.out.println(a);
        System.out.println(b);
        a -= 2;
        b = a++;
        b--;
        System.out.println(a);
        System.out.println(b);
    }
}
```

Output Window

4. Write a program that takes a number (an integer) in cents and returns the minimum number of coins (quarters, dimes, nickels, pennies) that is needed to make up the total value.

Sample Output

```
Enter an integer value in cents: 84
You need: 3 quarters, 0 dimes, 1 nickel and 4
pennies
```

```
Enter an integer value in cents: 68
You need: 2 quarters, 1 dimes, 1 nickel and 3
pennies
```