Variable Definitions Lab Assignment

Compare the completed worksheet with your pair programming partner. Discuss any discrepancies and ask your TA if you have any questions. Write a program called VariableDefinitions.java that contains a main method. Inside the main method, complete each of the following steps:

1. Write an output statement using System.out.println() that displays the names of both programmers in the pair and course section number. Remember that the string literal must be placed inside the parenthesis of the output statement and the characters must be enclosed in double quotes.
2. Declare and initialize each of the variables in part A and part B. Save and compile your program, correcting any compilation errors before continuing each step.

```
byte numPeople = 3;   // initial declaration of numPeople variable
```

3. Add statements to print out the name of each variable and its value from step 1. Compile and execute your program.

```
System.out.println("The numPeople variable has a value of " +
                                numPeople);
```

4. Switch positions, if you haven't already done so, and write code to modify the value of each variable from step 1 with another assignment statement. Compile and run your program.

```
numPeople = 6;          // modified value of the numPeople variable
```

5. Add code to print out the names of the variables and their new values, compile and run your program. For example:

```
System.out.println("The numPeople variable now has a value of " +
                                numPeople);
```

6. Next, write statements to declare and initialize eight constants, one for each of the primitive types in Java. Add statements to print the name of the constant and its value to your VariableDefinitions.java program and compile the program. Try to change one of the constant values with an assignment statement. What happens?

   Comment out the lines of code that cause compilation errors but do not delete them and recompile your program.

7. Download the program Expressions.java. Each invocation of println outputs the result of an arithmetic expression. The first two println commands are followed by comments that describe the operations that occur in each expression.

8. Before compiling the program, read through the code with your partner and add a comment after each println statement that thoroughly **describes all the arithmetic operations that occur when evaluating the expression that is printed and include the expected result that would be displayed.**

9. Compile and execute the program. Verify that the actual results match the expected results in the comments. Be certain that any discrepancies are corrected and that you thoroughly understand how the arithmetic expressions are evaluated.

10. Show your TA the source code files for both of your completed programs,

    VariableDefinitions.java and **Expressions.java**.