Programming Assignment 2: Expressions and Variables
Total Points (30 pts) - Due Wednesday, January 25th at 11:59 PM

The second programming assignment is intended to demonstrate your knowledge of the following:

- compiling and running a Java program
- performing input and output of data
- performing a simple calculation using primitive data types and numeric operators
- using variables to store results of a computation into memory
- writing arithmetic expressions to accomplish a task

Assignment 2.1: Three Expressions [15 points]

Write a program that computes and displays the following three values.

$$\#1: \quad myId \ \% \ 17$$

$$\#2: \quad (numLet + 17) \ \% \ 11$$

$$\#3: \quad \frac{myId}{numLet + 800.}$$

The three expressions assume that you have stored your student ID into the variable **myId** and the number of letters in your **first** (not your family) name into the variable **numLet**. You can manually enter both of these using **assignment statements** in your program source. No user input allowed.

CLASS NAME. Your program class should be called *ThreeExpressions.java*

sample run:

```
My first name is Hanan
My Student ID is 22222222
The number of characters in my first name is 5

Expression #1 --> 1

Expression #2 --> 0

Expression #3 --> 24554.941436464087
```

Here are some tips and ***REQUIREMENTS***:

- Don't limit the precision of the expected double output in any way. (E.g., Avoid using advanced formatting to make the result look shorter or neater than they would by using the simpler default formatting.)
- Only one run, please, which means you must produce all **three** answers in your program in a single source file.

- Expressions **#1** and **#2** should use ordinary ***int arithmetic***, which means using the **int** variables without any special tools. However, expressions **#3** is meant to display the ***full double accuracy*** that the divisions will produce, you should take appropriate action to do that.
- Use as few variables as possible. You can, for example, use one **intResult** variable for the two int expressions and a second **doubleResult** variable for the double expressions.
- As you see in the sample run, the first thing your program needs to do is print out your **first name**, your **student ID**, and the **number of characters**.

Assignment 2.2: Word Game [15 pts]

Write a program that plays a word game with the user. The program should ask the user to enter the following:

- His or her **name**
- His or her age
- The **name** of a city
- The **name** of a college
- A profession
- A **type** of animal
- A pet's **name**

After the user has entered these items, the program should display the following story, inserting the user's input into the appropriate locations:

There once was a person named **NAME** who lived in **CITY**. At the age of **AGE**, **NAME** went to college at **COLLEGE**. **NAME** graduated and went to work as a **PROFESSION**. Then, **NAME** adopted a(n) **ANIMAL** named PETNAME They both lived happily ever after!

Input: Keep in mind that the input responses to the prompts may consist of multiple words. For example, name might be "John Jinkleheimer Schmidt".

CLASS NAME. Your program class should be called *WordGame.java*

sample run:

```
Enter your name: Richard
Enter your age: 25
Enter the name of a city: Palo Alto
Enter the name of a college: Foothill College
Enter profession: Programmer
Enter a type of animal: dog
Enter a pet name: Rock

There once was a person named Richard who lived in Palo Alto. At the age of
25, Richard went to college at Foothill College. Richard graduated and went
to work as a Programmer. Then, Richard adopted a(n) dog named Rock. They both
lived happily ever after!
```

Submission Instructions

- Execute the program and copy/paste the output that is produced by your program into the bottom of the source code file, making it into a comment. I will run the programs myself to see the output.
- Make sure the run "matches" your source. If the run you submit could not have come from the source you submit, it will be graded as if you did not hand in a run.
- Use the Assignment Submission link to submit the source code file.
- Submit the following file:
  - ThreeExpressions.java
  - WordGame.java
- Do not submit **.class** files.

Standard program header

Each programming assignment should have the following header, with italicized text, appropriately replaced.

```
/*
 * Class: CS1A
 * Description: (Give a brief description of Assignment 2)
 * Due date:
 * Name: (your name)
 * File name: WordGame.java
 */
```