HW#1

Computer Science: Program Your Own RPG

Instructions: Complete as much as you can in one hour and then stop. (Do your best.) Try to do #1 and #2 on your own, but you may work with others for #3.

1. Complete the following code such that *Calculator.java* can add, subtract, multiply, divide, or exponentiate two numbers input by the user:

```
import java.util.Scanner;

public class Calculator
{
	public static void main(_____)
	{
		Scanner input = new Scanner(System.in);
		System.out.print("Would you like to [add], [sub]tract,"+
							"[mul]tiply, [div]ide?, or [exp]onentiate?");
		String operation = input.next();

		System.out.println();
		System.out.println("Please enter your equation: ");
		if(operation.equals("add"))
		{
			int i1 = input.nextInt();
			System.out.print(_____);
			int i2 = input.nextInt();
			int r = _____;
			System.out.print(" = " + r);
		}
		else if (_____)
		{
			int i1 = input.nextInt();
			System.out.print(" - ");
			int i2 = input.nextInt();
			int r = i1 - i2;
			System.out.print(" = " + r);
		}
		_____
			{
			int i1 = _____;
			System.out.print(" * ");
			int i2 = _____;
			int r = i1 * i2;
			System.out.print(" = " + r);
		}
		else if (operation.equals("div"))
		{
```

```
                int i1 = input.nextInt();
                _____;
                int i2 = input.nextInt();
                int r = _____;
                _____;
            }
            else if (operation.equals("exp"))
            {
                _____;
                System.out.print(" ^ ");
                int i2 = input.nextInt();
                int r = (int) Math.pow(____, i2);
                System.out.print(_____);
            }
            else
            {
                System.out.println("Invalid operation.");
            }
            input.close();
        }
}
```

2. Finish the following terminal commands such that the above code will compile and then run. Assume that the code is kept in the directory C:\Users\User\Documents\ :

```
> _____ C:\Users\User\Documents\
> _____ Calculator.java
> java _____
```

3. Notice in Calculator.java that the user first puts in the operation she wants, followed by the two numbers she wants to add, subtract, multiply, divide, or exponentiate. This is called prefix notation. Here are some examples:

Prefix	Infix (normal)	Answer
+ 4 7	4 + 7	11
^ 2 5	2 ^ 5	32
/ + 9 3 2	(9 + 3) / 2	6
/ 6 - 3 2	6 / (3 - 2)	6

...

Complete the following table:

* 2 3		6
	4 ^ (5 - 3)	
* + 3 2 + 4 5		45
	6 * (7 + (8 /2))	
- 9 / + * 2 4 ^ 2 3 8		