Problem Set 6     (Due Tuesday 4/24. Put in Dropbox or bring a hardcopy to class.)

Name: _____________________________________________

String Manipulation

1) (18 pts) Write a program that splits the numbers in the given myNums String, converts them to floats, and prints them to the console.

```java
void setup() {
    String myNums = "1.2, 2.3, 3.4, 4.5, 5.6";

    // Add your code here
}
```

2) (18 pts) Finish the following program, which was designed to count and print the number of duplicate Strings in the myArray String array.

```java
// Count and print the number of duplicate strings in myArray

void setup() {
    int count = 0;

    // Add code here

    println("There are " + count + " duplicates.");
}
```
Functions and Multidimensional Arrays

3) (10 pts) Write a function frac that takes two integers, a numerator and a denominator, and returns a float which is the corresponding fraction. For example: `println(frac(1, 4));` will print 0.25.

4) (18 pts) Write a program that declares a 2D ragged float array that matches the following triangular shape and fills it with random numbers.

Recursion

5) (18 pts) Add a recursive function named recursiveDigitSum() to the following program. The new function should compute and returns the sum of the digits in a string myDigits.

```java
void setup() {
    String myDigits = "123456789";
    println( recursiveDigitSum( myDigits ) );
}
```

ArrayLists

6) (18 pts) Write a short program that (i) creates an ArrayList, (ii) adds to the ArrayList the numbers 0 through 9, (iii) then removes the odd numbers, and (iv) prints out all remaining items in the ArrayList.