

Student Name: _____ Student ID # _____

UOSA Statement of Academic Integrity

On my honor I affirm that I have neither given nor received inappropriate aid in the completion of this exercise.

Signature: _____ Date: _____

Question 1: Exceptions (20 points)

A. What is the purpose of the **throws** keyword? Consider the following:

If you write a method that calls an existing method that may throw an exception, then your method either (1) needs to catch that exception or (2) declare that it may throw the exception itself by using the keyword **throws**. If your code doesn't do one or both of these, the compiler will generate an error.

But, why have a **throws** keyword at all? Why not have the compiler simply assume that your method will throw the exception, unless you add code to catch the exception?

List and *explain* one reason that the **throws** keyword is useful.

B. What is the purpose of the **try** keyword? Why not have the compiler look to the **catch** blocks to figure out which errors you are trying to catch?

Question 2: Graphical User Interfaces (20 points)

List and *explain* two similarities between frames and panels.

A. Similarity one.

B. Similarity two.

List and *explain* two differences between frames and panels.

C. Difference one.

D. Difference two.

Question 3: Event-Driven Programming (20 points)

A. *Explain* why each **actionPerformed** method takes, as a parameter, an **ActionEvent** object.

B. Is it possible to have more than one listener that is listening for the same event at the same time (e.g., a mouse click on a particular button)? If not, explain why this would always be a bad idea. If so, give an example of when you might want to do something like this.

Question 4: Applets (20 points)

You want to test the first Java applet you have written, which you have called **MyFirstApplet**. For each possible testing method listed below, say under which conditions (if any) it will work and *explain* your answer.

A. Write a simple html web page that includes an applet tag that references the compiled `.class` file. Start a web browser and load the web page you created.

B. Write a simple html web page that includes an applet tag that references the compiled `.class` file. Run the **appletviewer** command using the web page you created as a command-line argument.

C. Run the compiled `.class` file by typing “`java MyFirstApplet.class`” on the command line.

Question 5: Recursion (20 points)

A. Why is it necessary to have at least one “base case” when writing a recursive method?

B. When converting from a recursive method to an iterative version of the same method, what happens to the recursive call (in general)?