Software Design I (CS 120)
Quiz 01: Monday, 05 February

NAME _____

(1) (3 points) When creating an object of a reference (class) type for use in a Java program, there are two basic steps to the process.

    (a) First, we must create an **identifier** to name the object; this step of the process is known

    as _____ a variable.

    (b) Second, we must in fact create the object; we call this _____,

    and it is done by calling the class _____ .

(2) (3 points) A Java **class specification** contains information about all of the methods of that class. Part of a method specification are the **pre-conditions** and **post-conditions**. Explain what each of these is.

(3) (4 points) Suppose you are writing a program, and you need to choose an identifier (variable name) for an object.

(a) What is one rule that you ***must follow*** when choosing the identifier (i.e., if you do not follow it, the code will not compile properly)?

(b) What is one rule that you ***should follow*** when choosing the identifier (i.e., the code will still compile properly if you don't, but it will make your code less readable)?

(4) (5 points) Analyze the following code, and answer the questions that follow it.

```
DrawingGizmo pen = new DrawingGizmo();
DrawingGizmo pencil = new DrawingGizmo();

DrawingGizmo gizmo1, gizmo2, gizmo3;
gizmo1 = pen;
pen = pencil;
gizmo2 = pencil;
pencil = null;
```

(a) Circle all of those variables that have `null` reference after the code is complete.

pen   pencil   gizmo1   gizmo2   gizmo3

(b) Write down the names of all distinct pairs of variables that have **the same** object reference, (**once the code has completed its run**). For example, if `pencil` and `gizmo1` refer to the same object, then you would write down the pair (`pencil`, `gizmo1`).