Name: (as it would appear on official course roster)		
Umail address:	@umail.ucsb.edu	section 5pm, 6pm, 7pm
Optional: name you wish to be called if different from name above.		
Optional: name of "homework buddy" (leaving this blank signifies "I worked alone"		

h06

CS56 F19

h06: HFJ 9,10,11: Constructors, Statics, Exceptions

ready?	assigned	due	points
true	Mon 10/07 05:00PM	Mon 10/14 05:00PM	100

Printable PDF You may collaborate on this homework with AT MOST one person, an optional "homework buddy".

MAY ONLY BE TURNED IN IN THE LECTURE/LAB LISTED ABOVE AS THE DUE DATE,
OR IF APPLICABLE, SUBMITTED ON GRADESCOPE. There is NO MAKEUP for missed assignments;
in place of that, we drop the three lowest scores (if you have zeros, those are the three lowest scores.)

Reading Assignment:

- Read HFJ Chapter 9, HFJ Chapter 10, and HFJ Chapter 11 along with the online reading notes that go with those chapters. Then, do the problems below. Refer back to previous chapters as needed.

1. (10 pts) Please fill in the information at the top of this homework sheet, including your name and umail address. Put the time your discussion section starts (5pm, 6pm, 7pm) in the space indicated (the one you are registered for—even if you usually attend a different one.) If the other two items apply, please fill them in as well. Please do this every single time you submit homework for this class.

2. From HFJ Chapter 9:

   a. (10 pts) Under what conditions does the compiler create a no-arg constructor for you?

   b. (10 pts) Under what conditions does the compiler NOT create a no-arg constructor for you?

3. From HFJ Chapter 11: Exceptions in Java can be divided into two broad categories:

   - One category is the kind that, if there is any chance it can happen in the code has to be "caught or declared to be thrown"
   - The other category is the kind that can happen, but doesn't have to be "caught or declared to be thrown".

   a. (20 pts) Exceptions that do not have to be caught or declared to be thrown are extensions of (i.e. they are subclasses of) what class?

   b. (15 pts) What is the rationale for having some exceptions that do NOT have to be declared to be thrown or caught? (i.e. why did the designers of Java put that feature into the language?)

   c. (10 pts) What is the rationale for having some exceptions that DO have to be declared to be thrown or caught? (i.e. why did the designers of Java put that feature into the language?)

4. (15 pts) From HFJ Chapter 11: Assume that s is an object of type `Student`, and that there is a method `public void registerFor(String courseNum)` that might throw the `NoSuchUCSBCourseException`.

   Write a segment of Java code that will:

   - call `s.registerFor(someCourse);`
   - write `"Success"` on `System.out` if the registration succeeded (i.e. that exception doesn't happen)
   - write `"Sorry " + someCourse + "does not exist"` to `System.out` if that exception occurs.

   Hint: this question is designed to see if you understand how to use `try/catch`. On an exam, you would not get this hint.

5. (10 pts) From HFJ Chapter 11: Write the code that creates a new kind of exception called `BadSuitException`. This exception might be thrown, for example, by a program that expects a character that is one of 'H','D','C','S' for Hearts, Diamonds, Clubs and Spades when it encounters an illegal value (one other than 'H', 'D','C' or 'S'.) `BadSuitException` should be a subclass of `IllegalArgumentException`. Write ONLY the code that creates the new kind of exception.

   Hint: If you do this properly, it should be *very* short. The best answer is a single line. There are also answers that are two lines, or at most five. If you write more than five lines, you are likely on the wrong track. On an exam, you would not get this hint.