Name:		
(as it would appear on official course roster)		
Umail address:	@umail.ucsb.edu	section 4, 5, or 6
Optional: name you wish to be called **if different from name above.**		
Optional: name of "homework buddy" **(leaving this blank signifies "I worked alone"**		

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

H10: Due Thursday, 01.21 in Lab

More on Swing and GUIs (HFJ Ch13)
Assigned: Wed 01.13   Total Points: 50

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 five lowest scores (if you have zeros, those are the five lowest scores.)

Reading Assignment:

- Read Chapter 13 in HFJ, including notes at HFJ:Chapter_13 if any.
  - As you work through the exercises below, you might also need to consult the Javadoc for the Swing classes: http://docs.oracle.com/javase/7/docs/api/

During S11, the CS56 students were assigned to create homework questions from Chapter 13. The remainder of the questions on this assignment are based on questions they came up with. (The W12 students did Chapter 16). Later in the course, you may have an opportunity to do the same thing with one or more of the chapters in the book this quarter.

1. (5 pts) Fill in the homework header properly—this helps us keep the grading pipeline flowing so that you get credit for your work and get feedback more quickly.

   - writing **either 4, 5, or 6** to indicate your **discussion section (lab)** meeting time

   - entering BOTH your name AND your umail address EVERY time.

   Paper submissions: One sheet of 8.5x11 paper double sided, or two DISCONNECTED SHEETS with your name on EACH. Please: **NO STAPLES, NO PAPERCLIPS, NO TAPE, NO ATTACHMENT OF ANY KIND**. These damage the document scanner.

   Scanned submission: When submitting by PDF upload: scan your pages legibly and **SCAN IN THE CORRECT ORDER**. Page 1 first, then Page 2, in the correct orientation. Failure to scan properly may result in zero credit, meaning you "use up" one of your five "drop the lowest grade" slots.

2. (4 pts) (Thanks to Mark O.) A student makes a JFrame with the code below. When the student runs the program, no GUI comes up. What line of code is missing? JFrame frame = new JFrame(); frame.setSize(400, 400);

3. (4 pts) (Thanks to Steven L.) Briefly describe the difference between a JFrame and JPanel.

4. (Thanks to Alex M.) Suppose you want to create a spot for a long piece of text that the user could possibly scroll through (e.g. a long legal thing like your "LICENSE AGREEMENT" or "TERMS OF USE")

   a. (3 pts) Would you use a JTextField or a JTextArea?

   b. (5 pts) To get the scrolling to work, what additional widgets would you need?

5. (Thanks to Ethan V.) Suppose we want to create a new check box with the label "Show Instructions".

    a. (4 pts) What code would you write to make a new check box with the label "Show Instructions" (i.e. declare the variable and invoke the constructor).

    b. (4 pts) Write code to "select" the check box you declared in part a.

    c. (3 pts) Still with the check box declared in part a, write some code that will print a message on System.out like this:

        a. print "The Box is checked!" if the box is checked

        b. print "The Box is not checked!" if the box is unchecked.

    d. (Thanks to Pedro L. and Ted R.) Read about the Border Layout Manager in Chapter 13, including all of the fine print on all of the pages! Note that there are two cases for the Border Layout Manager: the normal case and the special case when pack() is used—be sure you understand both. Then answer these questions:

        a. (3 pts) In the normal case, which regions get their preferred **width**?

        b. (3 pts) In the normal case, which regions get their preferred **height**?

        c. (3 pts) In the normal case, how are the dimensions of the center component determined?

        d. (3 pts) The special case is when the pack() method is used. Describe what happens when the pack() method is used.

        e. (3 pts) Where in the chapter is there some sample code that uses the pack() method (indicate the page number)? (You may need to read the sections that the book indicates are "optional" to find it. They aren't optional for this course!)

        f. (3 pts) Now briefly describe why the pack method is needed in that particular circumstance. That is, why did the developer use the pack() method?