

First name (color-in initial)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	section (4, 5 or 6)	first name initial	last name initial
Last name (color-in initial)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z			

H06: Due Thursday, 01.15 in Lab

Review for Midterm Exam 1 (HFJ Ch1-8)

Assigned: Thu 01.08

Total Points: 50

MAY ONLY BE TURNED IN IN THE LECTURE/LAB LISTED ABOVE AS THE DUE DATE,
or offered in person, for in person grading, during instructor or TAs office hours.

See the course syllabus at <https://foo.cs.ucsb.edu/56wiki/index.php/W15:Syllabus> for more details.

(1) (10 pts) Fill in the information below. Also, fill in the A-Z header by

- **coloring in** the first letter of your first and last name (as it appears in Gauchospace),
- writing **either 4, 5, or 6** to indicate your **discussion section (lab)** meeting time
- writing your **first and last initial** in large capital letters.

All of this helps us to manage the avalanche of paper that results from the daily homework.

name:	
umail address:	@umail.ucsb.edu

If you collaborated with AT MOST one other person on this homework, write his/her name below. She/he should also have your name on his/her paper.

(2) At right is some Java code. The main produces two lines of output.

(a) (6 pts) What is the first line of output? Circle one:

- first=Phill last=Conrad
- first=Conrad last=Phill

(b) (6 pts) What is the second line of output?

- nums=[20, 30, 20]
- nums=[20, 30, 40]
- nums=[30, 20, 40]
- nums=[40, 20, 30]
- nums=[40, 30, 20]

```
import java.util.ArrayList;
public class Prob2 {

    public static void swap(String a, String b) {
        String temp = a; a = b; b = temp;
    }

    public static void swap(ArrayList<String> a, int i, int j) {
        String temp = a.get(i); a.set(i,a.get(j)); a.set(j,temp);
    }

    public static void main(String [] args) {
        ArrayList<String> nums = new ArrayList<String>();
        nums.add("20"); nums.add("30"); nums.add("40");

        String first = "Phill";
        String last = "Conrad";
        swap(first,last);
        swap(nums,0,2);

        System.out.println("first=" + first + " last=" + last);
        System.out.println("nums=" + nums);
    }
}
```

(3) This homework exercise is the "sharpen your pencil" exercise from p. 169. The code is recreated at right. Note that in the real world, these three classes would be in three separate files, but to save space in the textbook, and on this homework, they are all in one listing.

As far as I could tell, there isn't an answer key in the book anywhere for this exercise. But if you find one, good for you.

```
public class Doctor {
    boolean worksAtHospital;

    void treatPatient() {
        // perform a checkup
    }
}
public class FamilyDoctor extends Doctor {
    boolean makesHouseCalls;
    void giveAdvice() {
        // give homespun advice
    }
}
public class Surgeon extends Doctor{
    void treatPatient() {
        // perform surgery
    }

    void makeIncision() {
        // make incision (yikes!)
    }
}
```

(a) (4 pts)	How many instance variables does Surgeon have?	
(b) (4 pts)	How many instance variables does FamilyDoctor have?	
(c) (4 pts)	How many methods does Doctor have? _____	
(d) (4 pts)	How many methods does Surgeon have? _____	
(e) (4 pts)	How many methods does FamilyDoctor have? _____	
(f) (4 pts)	Can a FamilyDoctor do treatPatient()? _____	
(g) (4 pts)	Can a FamilyDoctor do makeIncision()? _____	