

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 (10, or 11)	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			

H09: Due Tuesday 04.25 in Lecture. Total Points: 50

Static vs. Non-Static methods, Autoboxing, Auto-unboxing, Final, Math class (HFJ Ch10)

MAY ONLY BE TURNED IN DURING Lecture ON Tuesday 04.25, 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/S13: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 would appear in Gauchospace),
- writing **either 10,11** to indicate your **discussion section** 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

Reading Assignment:

- Read HFJ:Chapter_10, starting on p. **273** Numbers Matter
- If there are reading notes on the wiki, consult those too—sometimes they contain helpful hints.

(2) Consider these questions about static methods:

- (3 pts) Does it ever make sense to have both static and non-static methods in the same class?
 - If so, does it ever make sense to create an instance of such a class?
- (3 pts) Does it ever make sense to have all static methods in a class?
 - If so, does it ever make sense to create an instance of such a class?
- (3 pts) Does it ever make sense to have all non-static methods in a class?
 - If so, does it ever make sense to create an instance of such a class?
- (3 pts) Is it possible to invoke a non-static method of class Foo without an instance of class Foo?
- (3 pts) Is it possible to invoke a static method of class Foo without creating an instance of class Foo?

(3) (3 pts) What does final mean when applied to a static variable?

(4) (3 pts) What does final mean when applied to a non-static variable?

(5) (3 pts) What does final mean when applied to a method?

(6) (3 pts) What does final mean when applied to a class?

(7) (3 pts) Write a line of Java code that would result in auto-unboxing

(8) (10 pts) Write a class in Java with a main program equivalent to the following C program. (Hint: Use the Math and classes and formatting methods of the String class described in Chapter 10.)

```
#include <math.h>
#include <stdio.h>

int main()
{
    int i;
    for (i=0;i<=10;i++)
    {
        double value= sin((i/10.0) * (2 * M_PI));
        printf("i=%3d value=%6.3lf\n", i, value);
    }
    return 0;
}
```