

CS 11 Fall 2005 — Mid-term 1

You have **50 minutes** to complete this exam. There are a total of 100 points on this test, so be sure to budget your time on questions accordingly. **Write clearly; answer all questions completely and concisely.**

1. (15 points) What will the following fragment of code print? (Hint: Pay close attention to the types of variables and operators!)

```
int i = 12;
double d = i;
System.out.println("First " + d);

int j = 18;
double e = j / i;
System.out.println("Second " + e);

double f = (double)(j / i);
System.out.println("Third " + f);

double g = (double)j / i;
System.out.println("Fourth " + g);
```

2. (15 points) Consider the Java code below and answer the questions that follow.

```
System.out.print("Enter x: ");
int x = Keyboard.readInt();
System.out.print("Enter y: ");
int y = Keyboard.readInt();

if (x >= y) {
    System.out.println("Flip " + x);
} else if (y < 8) {
    while (x < y) {
        System.out.println("Quip " + x);
        x = x + 1;
    }
}
if (x == y) {
    System.out.println("Blip " + y);
}
```

- (a) What would the output be if the user entered 8 and 8?
- (b) What would the output be if the user entered 3 and 5?

3. (10 points) There is a bug in the code fragment below that will prevent it from compiling. Find the bug and fix it.

```
int i = Keyboard.readInt();
int j = Keyboard.readInt();
if (i > j) {

    int x = 0;
    double d;
    while (x < i) {
        d = i * j / 15 + i;
        x++;
    }
}

System.out.println(d);
```

4. (30 points) Write the method `funnyTable` that takes two parameters and prints a table in the form shown below. Specifically, here is the output that should be printed if the method is called using the form `funnyTable(4, 'E');`

```
A-4 A-3 A-2 A-1
B-4 B-3 B-2 B-1
C-4 C-3 C-2 C-1
D-4 D-3 D-2 D-1
E-4 E-3 E-2 E-1
```

5. (30 points) We want to write a program that allows the user to enter a list of numbers and then prints out the maximum number from that list. The `main` method of this program is:

```
public static void main (String[] args) {

    double x = getMaxFromUser();
    System.out.println("Max = " + x);

}
```

Write the method `getMaxFromUser`. The user should be able to enter an arbitrary number of values. The method should alternate between asking the user whether he wants to enter another value and, if the answer is affirmative, asking the user to enter the value itself. After the user has entered all of his numbers, the method should return the maximum value entered.

You may assume that someone else has written (and that you may use) the following two methods that obtain information from the user:

```
public static double getDouble();
public static boolean getYesOrNo();
```