

# FIRST QUIZ

You have 15 minutes from the start of class to complete this quiz. Read the questions with care; work with deliberate speed. Don't give us more than we ask for. The usual instructions apply. Good luck!

## Problem 1 (12 points)

Suppose you're automating the medical records of a hospital. Write a complete definition of the class Patient; it should include each of the following components

- Fields for the patient's name, ID, doctor's name (all Strings), and current amount due (in cents)
- A constructor function that fills all the fields with its arguments
- Accessor (getter) functions for each of the fields
- A `toString` function that returns the patient information in this form (assuming that the patient with ID 34567 is named Peter Patient, his doctor is Pauline Phrenologist, and he owes \$456.78):

```
[ID 34567] Peter Patient (Dr. Pauline Phrenologist): $456.78
```

(Note that the strings "ID" and "Dr." are not stored in the fields of the Patient class.)

We have provide a copy of the restaurants program as a reference.

**Problem 2** (10 points)

Your hospital management program will also have a class `PatientList` for the collection of patients. Write the method `totalDueForDoctor` as described below. Assume the `PatientList` class has a field called `thePatients` that contains an `ArrayList` of all the patients.

```
// Return the total amount due from all patients of the specified doctor
```

```
public int totalDueForDoctor (String doc) {
```

```
}
```

**Problem 3** (3 points)

Why does Java give us access modifiers like `public` and `private`? Why wouldn't it just be more convenient to let any part of the program access whatever fields and methods it needs? Answer in one or two brief English sentences, but don't just say, "It makes programs better."