**CSCI 182 Fall 2017, Final Exam**
**Wednesday, 13 December 2017, 11:30 AM – 2:00 PM**

**This problem is worth 40 points.**

This is a somewhat longer programming example than in previous exams. I suggest you keep Moodle open and upload updated copies of your program at 1:00 PM, 1:30 PM, and 2:00 PM. We have been asked to give students the hour-of-rest between exams, so **you must have your Processing program uploaded by 2:10 PM.**

To save you the time of looking up the "right" colors, here are definitions of the colors I used in the example pictures.

```
int darkGreen = #006400 ;
int bloodRed = #8A0707 ;
int babyBlue = #A1CAF1 ;
int daffodil = #FFFF31 ;
```

I just passed them directly to `fill`, as in:

```
fill(bloodRed) ;
```

You can go to the Moodle page and download a Processing program with these colors defined.

There are two fairly independent parts in this task.

**Task 1**
Create the image of an eyeless yawning ogre. As the ogre yawns, the mouth of the ogre **gradually** changes from closed to half closed/open to open to half/open and back to closed. This is a cyclic transition, somewhat like a bouncing ball. Yadda. Yadda. Yadd.



**Task 2**
Once you have a yawning ogre, add a movable eye. Make your ogre start up with an eye in the middle of its forward; but, *whenever you mouse press with any button on the ogre's face*, move the eye to that location of the mouse press. Do not move the eye when you press outside the face. Here are a few examples. The one on the left is the starting position.



You should only add code in Task 2. You should not need to delete anything!