CS110 – Spring 2012
Problem Set 2 (due Tuesday 2/14 in class, bring hard copy)

1) (15) Given the following variable definitions, what value and type do the following expressions evaluate to? If you show your work process clearly, partials may be assigned.

```
int a = 2, b = 5;
float x = 2.0;
double y = 10.0;

a) y * (b - a)
b) 10%b + x
c) b / a * x
```

2) (15) Write statements that will change the background to a random color if the current **mouseX** and **mouseY** are in the bottom left quadrant of the sketch window, and do nothing otherwise.

3) (20) Write two loops that paint a grid over the sketch window using horizontal and vertical lines. The resolution of the grid (i.e. number of cells in each direction) should be determined by two int variables, **m** and **n**, where **m** specifies the number of rows and **n** specifies the number of columns.

4) (10) Modify your above answer to 3) to a void function named `grid` that does the same, and takes **m** and **n** as parameters. In addition, add a call to your function that will draw a grid of 50x100 covering the entire sketch.

5) (15) Modify your answer to 4) so that the same grid is drawn with one inner loop nested inside one outer loop. Hint: consider each grid cell an individual rectangle.

6) (25) Write function that takes an integer **n** and returns true if **n** is prime and false otherwise.