CS 145 Images and Imagination
Variable Practice Problems
Spring 2014

1. Assume you have the variable declarations below.

```
int n = 0;
int m = 10;
float x = 0.0;
float y = 10.0;
```

What are the values of n and x below after the assignment, or state whether the assignment statement generates an error.

```
n = 1/m+5;              ans: n = _____  (or error)
n = y;                  ans: n = _____  (or error)
x = y;                  ans: x = _____  (or error)
x = 2 * y + 1.5;        ans: x = _____  (or error)
n = 10 % 4;             ans: n = _____  (or error)
n = 4 % 10;             ans: n = _____  (or error)
x = 3.1(4.0 + y);       ans: x = _____  (or error)
```

2. What are the values of x, y, and z after the following code is executed:

```
float x = 2.0;              Ans:  x = _____
float y = 3.5;                    y = _____
float z = 4.1;                    z = _____
x = y;
y = z;
z = x;
```

3. Look up the function size() in the Processing reference. Based on what the documentation says, can you figure out why the following generates an error? If you are still confused, run it in Processing and look at the error message that is generated. Does it make sense now?
```
float w = 100;
float h = 200;
size(w,h);
```

The above code may be fixed using something called "casting". We will discuss this in class.

4. Suppose we set the allowed range of the RGB components to be between 0 and 100 as shown in the code below.

```
size(200,200);
colorMode(RGB,100);
for (int y = 0; y < height; y++) {
  stroke(y, 100,100);
  line(0,y, width, y);
}
```

If we then run the above code, get the following result:

Can you speculate as to why the color is white in the bottom half of the window?

Can you see how to fix it so that you get the following? (hint: use the mod (%) function.