Lecture 5: Variables Worksheet

1) Open Processing and type in the following lines, each of which contains an error. Processing will warn you about the error in a red bar towards the bottom of the window. Write down the error message associated with each line:

Code	Error Message
x = 0.5;	
int x = 0.5;	
float y = 0.5	

2) For the following sequence of code, indicate the variable values after each statement is executed (*i.e.* this is one program, but we are pausing after each statement to observe the current variable values). If a variable value doesn't exist, then write "n/a".

Code	Variable Values After Execution
int x = 1;	// x = _____ , y = _____ , z = _____
int y = 2;	// x = _____ , y = _____ , z = _____
int z = 3;	// x = _____ , y = _____ , z = _____
x = z;	// x = _____ , y = _____ , z = _____
z = 5;	// x = _____ , y = _____ , z = _____
x = y + 2;	// x = _____ , y = _____ , z = _____
y = y - 3;	// x = _____ , y = _____ , z = _____
z = x + y;	// x = _____ , y = _____ , z = _____

3) The `max()` command returns the larger of two values, while `min()` returns the smaller of two values. For the following values of `int x` and `int y`, what do the shown commands return?

x	max(0, x);
10	
5	
0	
-5	

y	min(200, y);
190	
195	
200	
205	

4) Type the following code into a new Processing file and then press Play.

```
int x = 120;
println(x);
```

Notice that an empty canvas appears and the value of x gets printed to the console. You can use the `println()` function to double-check your answers to questions 2 and 3.

5) Type the following code into a new Processing file and then press Play.

```
void setup() {
  size(500, 500);
}
void draw() {
  triangle(70, 10, 30, 50, 110, 50);   // roof
  rect(30, 50, 80, 80);                 // walls
  rect(80, 90, 20, 40);                 // door
}
```

This draws the house shown in lecture! Following the procedure shown in lecture, introduce a variable named `houseX` that controls the horizontal position of the house and update the code to put the house in the middle of the canvas (`houseX = 250;` should do the trick).

6) [Optional] Take your finished code from question 5 and introduce a variable `houseY` that controls the vertical position of the house.