Lecture 7: Functions Worksheet

1) Open Processing and type in the following function definition. Also create empty setup() and draw() functions. What happens when you press Play? Why is this?

```cpp
float halfPlus7(float age) {
  return age/2 + 7;
}
```

2) Now add the following line to draw(). Make sure that it is indented inside of draw()! What happens when you press Play? Why is this?

```cpp
float f = halfPlus7(18);
```

3) Now change the line in draw() to the following. What happens when you press Play? Why is this?

```cpp
println(halfPlus7(18));
```

4) Move the println() statement from Question 3 to setup() then add another call to halfPlus7() so that it now reads:

```cpp
println(halfPlus7(halfPlus7(18)));
```

First, predict what you think will happen when you execute this program. Now press Play and verify!

5) Now delete the parameter list in the definition of halfPlus7(). List the TWO errors that appear. Hint: click on any red underline that you see.
6) Below we describe a few new functions that we are designing. Based on the descriptions, decide on (a) the return type and (b) the parameter list (how many parameters, what data types, and what names you will use).

As a reminder, here are some common datatypes:

- **int** – integers (positive and negative whole numbers)
- **float** – decimal numbers (includes integers)
- **color** – color (specified in RGB format)
- **boolean** – true or false

The function **drawUW** will draw a UW logo centered at a specified coordinate (x,y) at a specified size.

```java
________ drawUW(_________________________________________________)  
{               
   ...         
}
```

The function **inch2cm** will convert someone's height from inches to centimeters (1 inch = 2.54 cm).

```java
________ inch2cm(________________________________________________)  
{               
   ...         
}
```

The function **isOdd** will tell you whether or not a specified number is odd (e.g. 1, 3, 5).

```java
________ isOdd(_________________________________________________)  
{               
   ...         
}
```

The function **pickColor** will give the user a randomly-selected color.

```java
________ pickColor(________________________________________________)  
{               
   ...         
}
```