Chapter 7

Methods practice
/What does the following program print?

```cpp
void setup() {
    int x = 5;
    it = x;
    printIt();
    it = 7;
    printIt();
    printIt();
    printIt();
}

int it;

void printIt() {
    println(it);
    it = 0;
}
```
What does the following program print?

```cpp
void setup() {
    int x = 5;
    printVal(x);
    printVal(7);
    println(x);
}

void printVal(int x) {
    println(x);
    x = 0;
}
```
// What is printed by the following program?
void setup() {
    func1(1);
    func2(2);
    func2(func3(3));
}
void func1(int x) {
    println("func1 " + x);
}
void func2(int x) {
    println("start func2");
    func1(x);
    println("end func2");
}
int func3(int x) {
    println("func3 " + x);
    return x*10;
}
Write a function that computes $x^n$. Assume that both $x$ and $n$ are integers and that $n$ is greater than or equal to 0. The function should return a value (e.g. like the `dist()` function) and not print anything.
// Program to compute $x^n$

```cpp
void setup() {
    println(exp(3, 4));
}

int exp(int x, int n) {
    int result = 1;
    while (n > 0) {
        result = result * x;
    
        n--;
    }
    return result;
}
```
Write a function called distance that computes the distance between two points. The function should take 4 parameters (all integers), and return the distance between the two points as a floating point value. Remember the Pythagorean theorem.

\[
distance = \sqrt{((x_2 - x_1)^2 + (y_2 - y_1)^2)}
\]
// What is printed by the following program?
void setup() {
    println(distance(0,0,10,10));
}
float distance(int x1, int y1, int x2, int y2) {
    return sqrt((x2–x1)*(x2–x1) + (y2–y1)*(y2–y1));
}

//Alternate solution:
/*@float distance(int x1, int y1, int x2, int y2) {
    return sqrt(sq(x2–x1) + sq(y2–y1));
}@*/