Functions

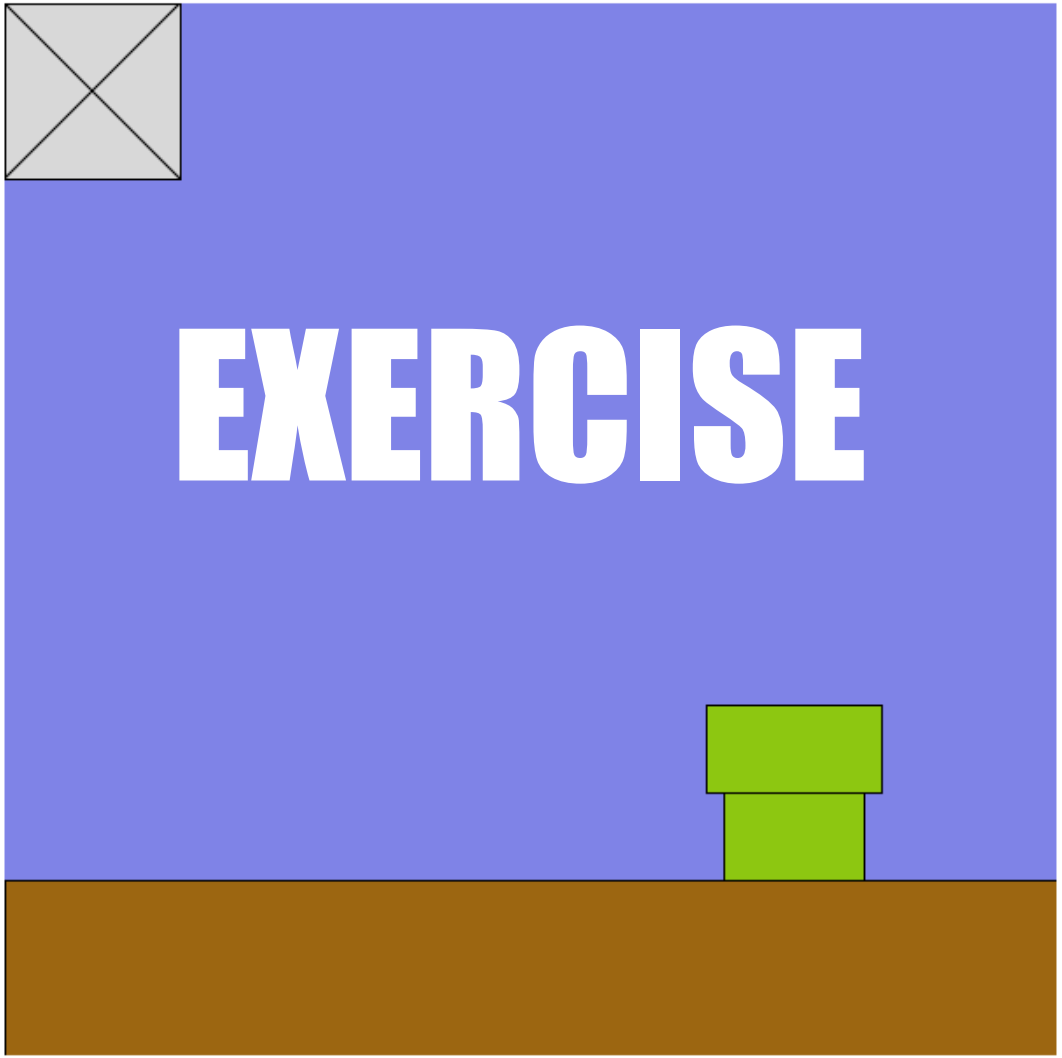
Operation Spark Bootcamp

rect(10,14,100,25);

rect(10,14,100,25);

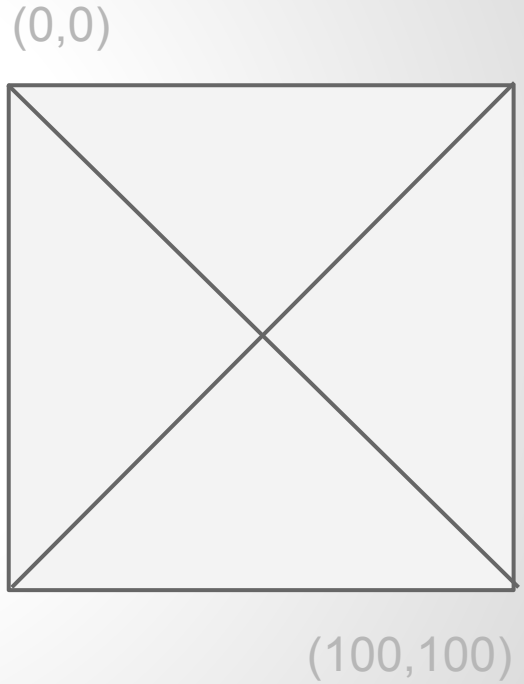
FUNCTIONS!

MARIO
000300
×01
WORLD
1-1
TIME
379
SOFTPEDIA
www.softpedia.com


EXERCISE

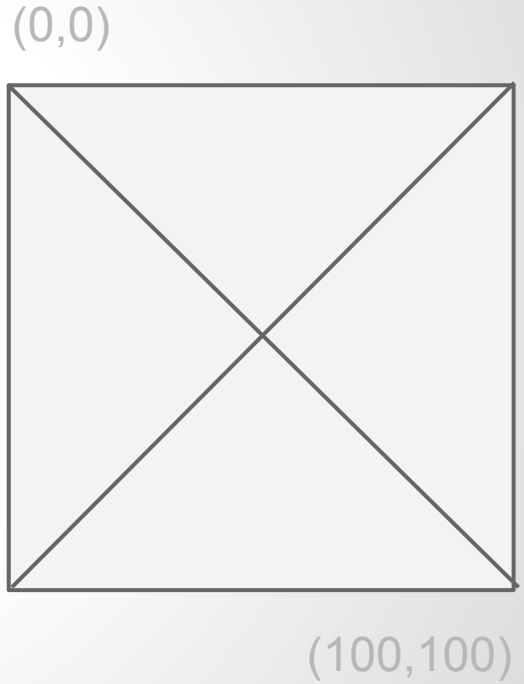
Drawing a box

```
fill(216,216,216);
rect(0,0,100,100);
line(0,0,100,100);
line(100,0,0,100);
```



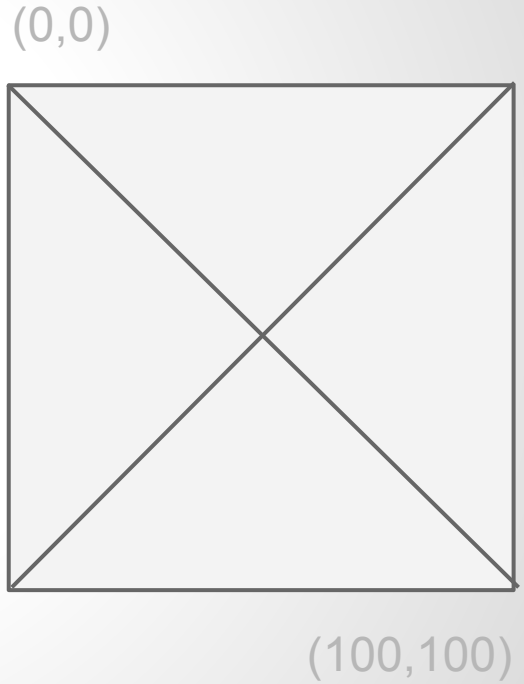
Drawing a box

```
var size = 100;

fill(216,216,216);
rect(0,0,size,size);
line(0,0,size,size);
line(size,0,0,size);
```



Drawing a box

```
var x = 0;
var y = 0;
var size = 100;

fill(216,216,216);
rect(x,y,size,size);
line(x,y,x+size,y+size);
line(x+size, y, x, y+size);
```



Some Terms

variable

```
var bling;
var game;
```

function

```
function swagga () { do something... }
```

parameter

```
function swagga (bling, game) { bling + game }
```

value

statement

```
function swagga (bling = 7, game = 2) {
  bling + game = swagga;
  console.log (swagga);  // 7 + 2 = 9
}
```

invoke

```
swagga (7, 2);  // 9
```

Drawing a box

```
function box() {
	var x = 0;
	var y = 0;
	var size = 100;

	fill(216,216,216);
	rect(x,y,size,size);
	line(x,y,x+size,y+size);
	line(x+size,y,x,y+size);
}
```

Drawing a box

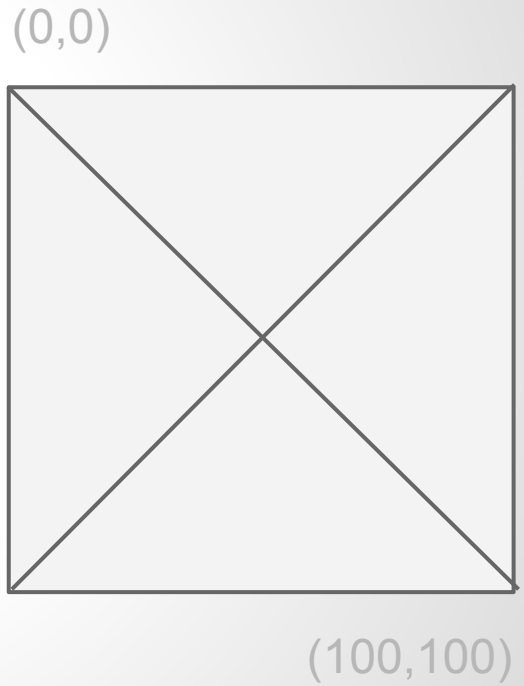
```
function box() {
	var x = 0;
	var y = 0;
	var size = 100;

	fill(216,216,216);
	rect(x,y,size,size);
	line(x,y,x+size,y+size);
	line(x+size,y,x,y+size);
}

box();
```

Drawing a box

```
function box() {
	var x = 0;
	var y = 0;
	var size = 100;

	fill(216,216,216);
	rect(x,y,size,size);
	line(x,y,x+size,y+size);
	line(x+size,y,x,y+size);
}

box();
box();
box();
```

Drawing a box

```
var box;

box = function() {
    // ...
};

box();
```



Drawing a box

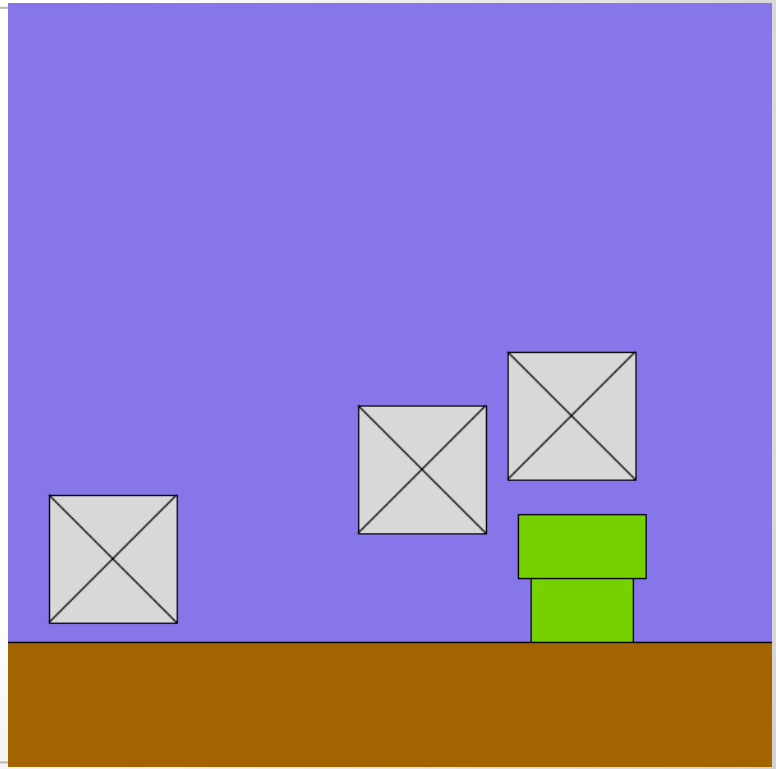
```
function() {
	var x = 0;
	var y = 0;
	var size = 100;

	fill(216,216,216);
	rect(x,y,size,size);
	line(x,y,x+size,y+size);
	line(x+size,y,x,y+size);
}
```

Drawing a box

```
var box;

box = function() {
      var x = 0;
      var y = 0;
      var size = 100;

      fill(216,216,216);
      rect(x,y,size,size);
      line(x,y,x+size,y+size);
      line(x+size,y,x,y+size);
};
```

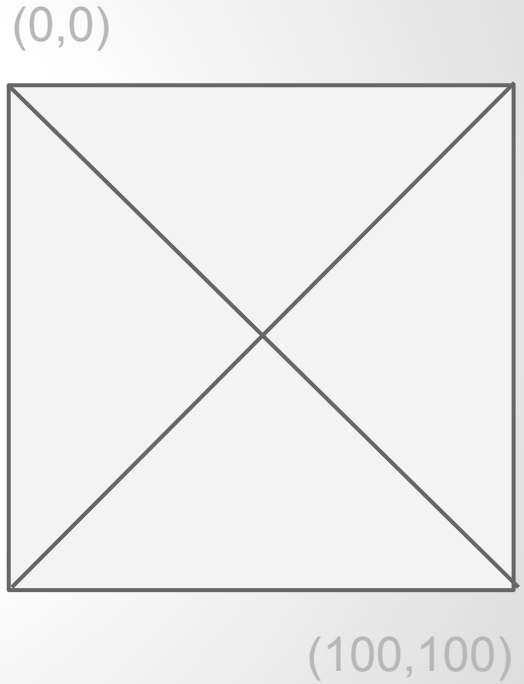
Drawing many boxes

```
var box;

box = function() {
      var x = random(600);
      var y = random(600);
      // all that code stays the same
};

box();
box();
box();
```



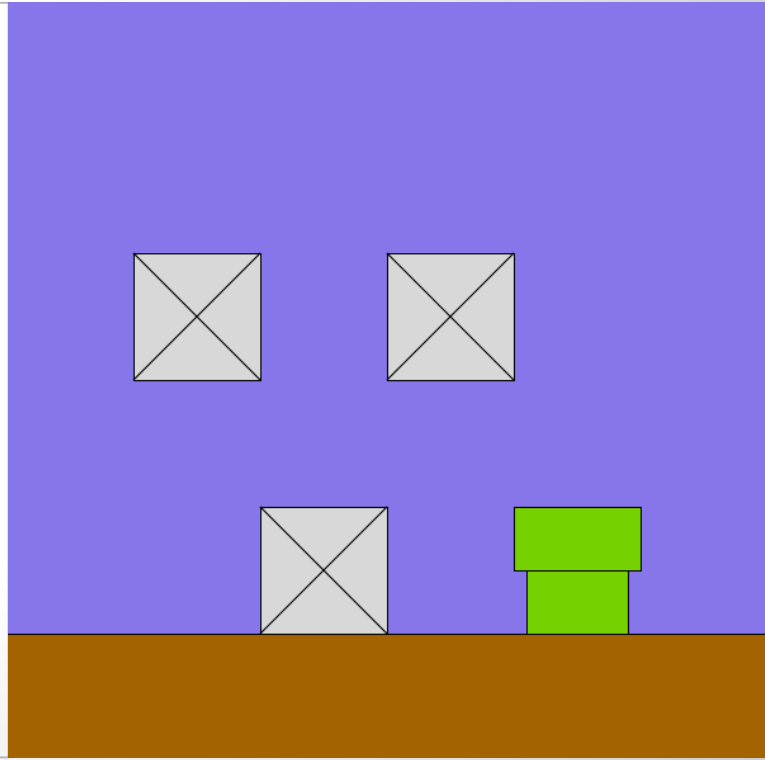
Drawing a box

```
var box;

box = function(x,y) {
      var size = 100;

      fill(216,216,216);
      rect(x,y,size,size);
      line(x,y,x+size,y+size);
      line(x+size,y,x,y+size);
};

box(0,0);
```



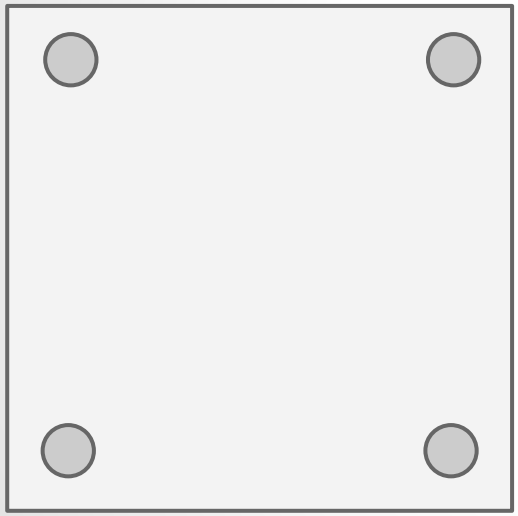
Drawing three boxes

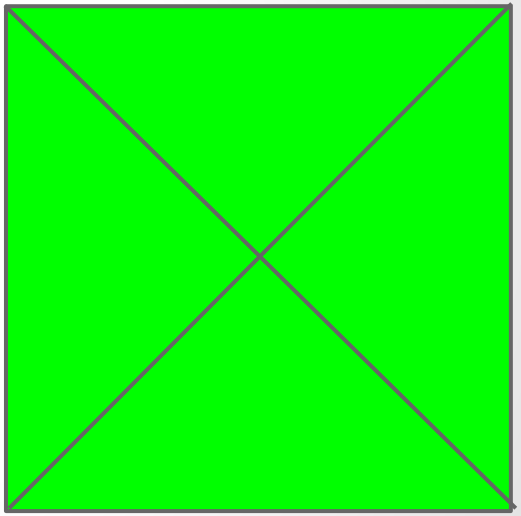
```
var box;

box = function(x,y) {
      // your function body
};

box(???);
box(???);
box(???);
```



CHALLENGE:

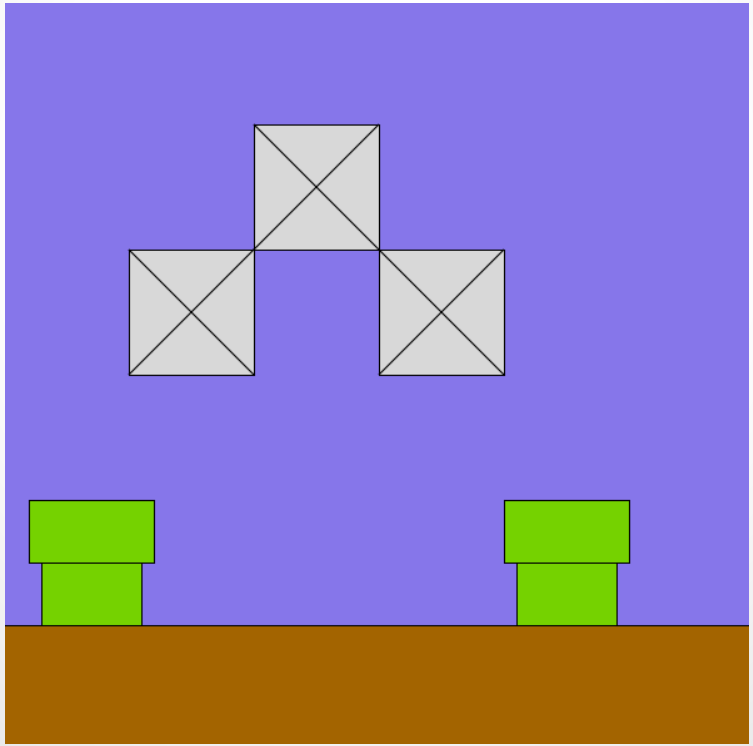
Change the box() function



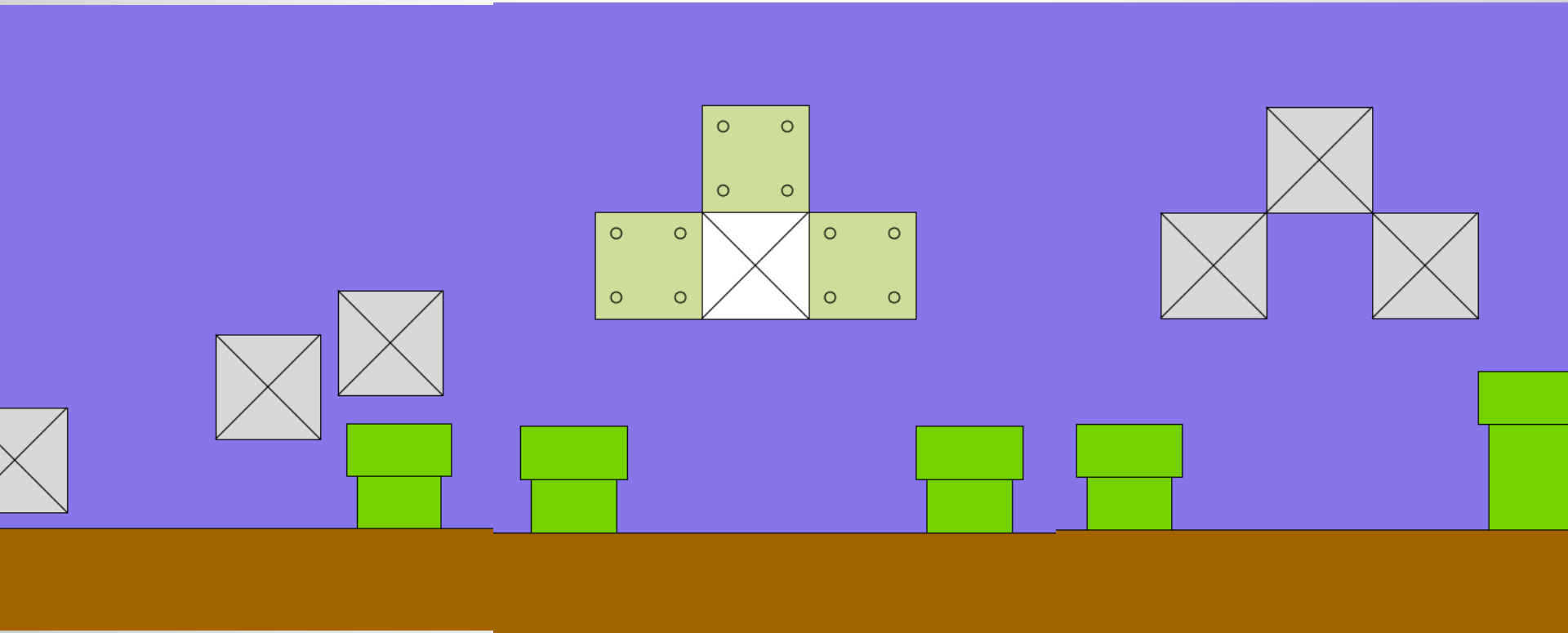


CHALLENGE:

Draw another pipe with functions!



FUNCTIONS!



WHYYY???
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Programmers are lazy

Which would you rather type?

```
rect(100,100,200,200);
ellipse(150,150,25,25);
ellipse(250,150,25,25);
line(125,225,275,225);
rect(100,100,200,200);
ellipse(150,150,25,25);
ellipse(250,150,25,25);
line(125,225,275,225);
rect(100,100,200,200);
ellipse(150,150,25,25);
ellipse(250,150,25,25);
line(125,225,275,225);
```

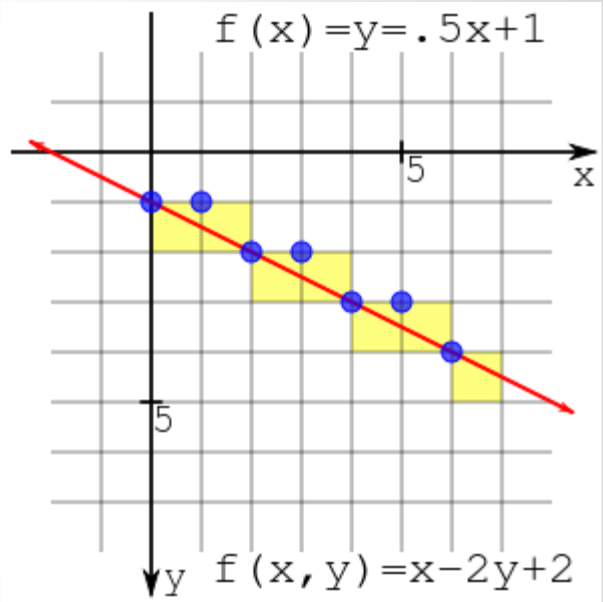
```
box(50,50);
box(0,100);
pipe(100,100);
```

I don’t want to know

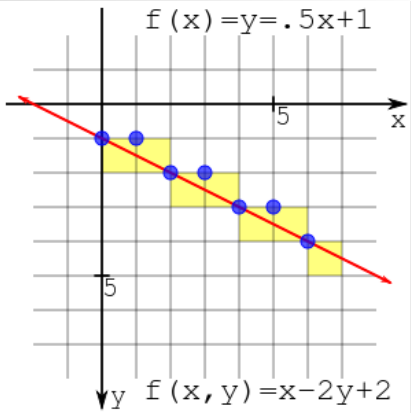
```
rect(10,100,200,100);
```

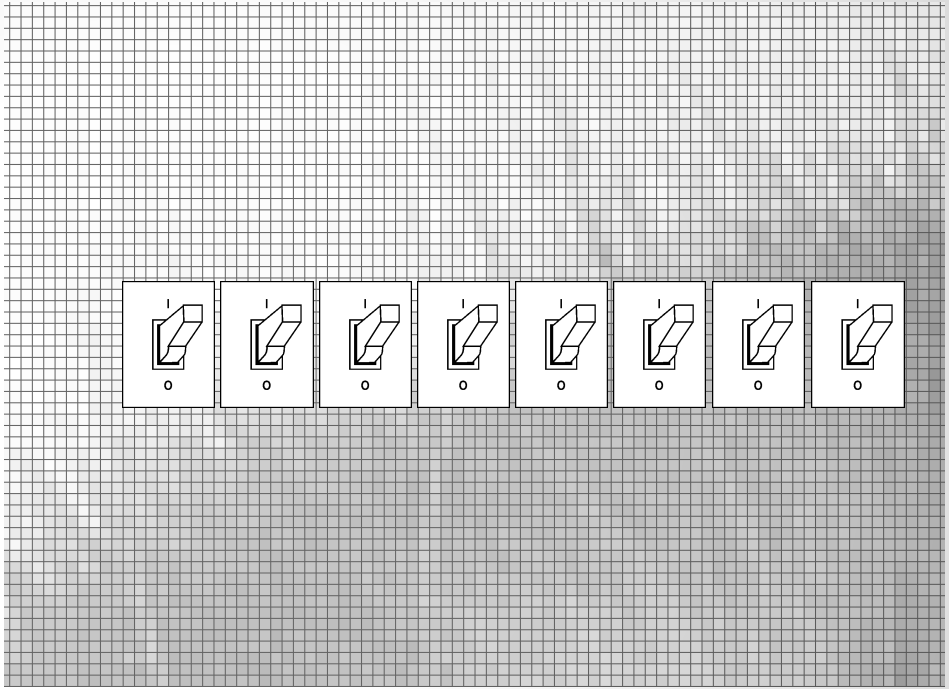
```
var rect;
rect = function(x,y,width,height) {
    line(x,y,x+width,y);
    line(x+width,y+height,x+width,y);
    line(x+width,y,x+width,y+height);
    line(x,y,x,y+height);
};
```

```
var rect;
rect = function(x,y,width,height) {
      line(x,y,x+width,y);
      line(x+width,y+height,x+width,y);
      line(x+width,y,x+width,y+height);
      line(x,y,x,y+height);
};
```

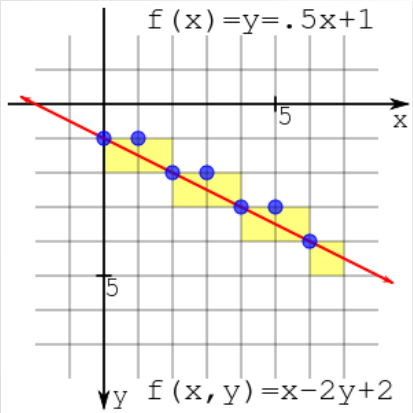


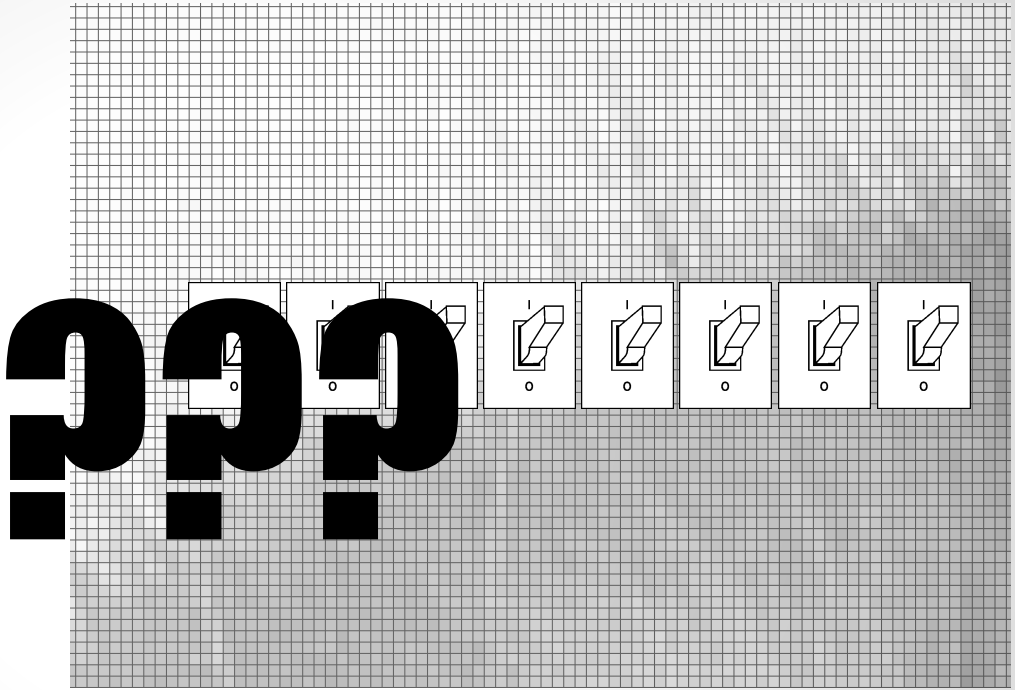
```
var rect;
rect = function(x,y,width,height) {
        line(x,y,x+width,y);
        line(x+width,y+height,x+width,y);
        line(x+width,y,x+width,y+height);
        line(x,y,x,y+height);
};
```

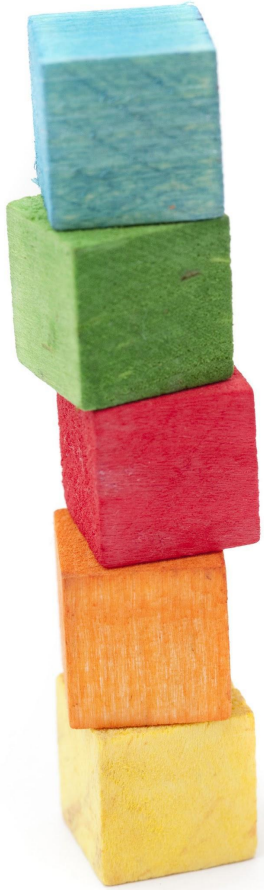




```
var rect;
rect = function(x,y,width,height) {
        line(x,y,x+width,y);
        line(x+width,y+height,x+width,y);
        line(x+width,y,x+width,y+height);
        line(x,y,x,y+height);
};
```







Functions are our building blocks

Comments are useful

```
// this is a comment

/*
   this is also a comment
   that goes over multiple lines
*/
```

LEGOLAND

FUN FACT:

functions can return a value

```
var add;

add = function(x,y) {
   return x+y;
};

var z = add(3,2);
```

Review - making Functions

```
var doStuff;

doStuff = function(x,y,z) {
   rect(x,y);
   ellipse(10+x,y+12,z,z);
};
```

Review - calling Functions

```
doStuff(1,2,3);
rect(10,100,25,25);
ellipse(1,1,100,100);
```