

Exercise 1-1: Looking at how we wrote the instruction for line “line(1,0,4,5);” how would you guess you would write an instruction to draw a rectangle? A circle? A triangle? Write out the instructions in English and then translate it into “code.”



English: draw a rectangle from point one,zero that has a width of 5 and height of 6
Code: rect(1,0,5,6);

English: draw a circle that centers on point 10,9, that has the diameter of 5
Code: ellipse(10,9,5,5);

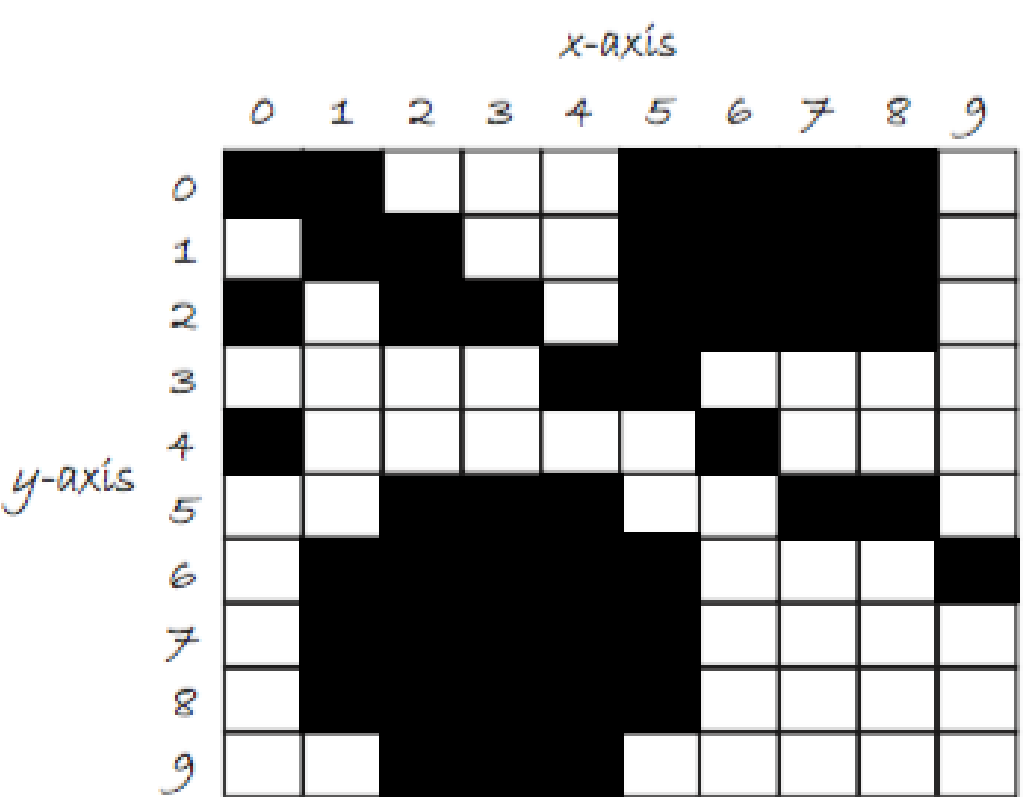
English: draw a triangle that has three points, they are 30,75;58,20;86,75;
Code: triangle(30,75,58,20,86,75)

Come back later and see how your guesses matched up with how Processing actually works.

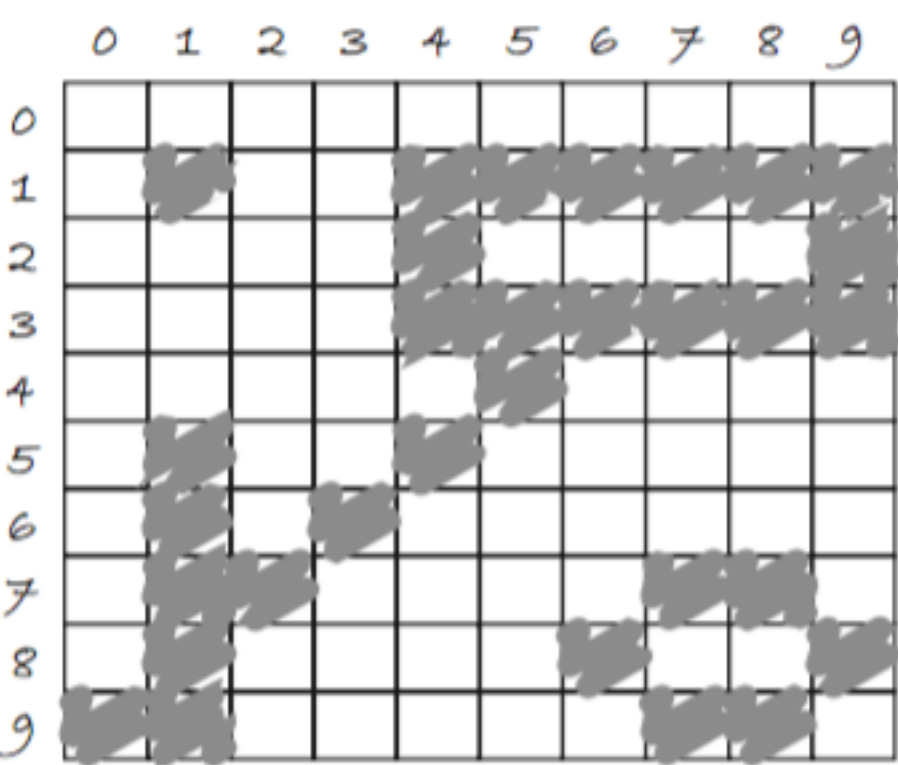
Exercise 1-2: Using the blank graph below, draw the primitive shapes specified by the code.



```
line(0,0,9,6);  
point(0,2);  
point(0,4);  
rectMode(CORNER);  
rect(5,0,4,3);  
ellipseMode(CENTER);  
ellipse(3,7,4,4);
```



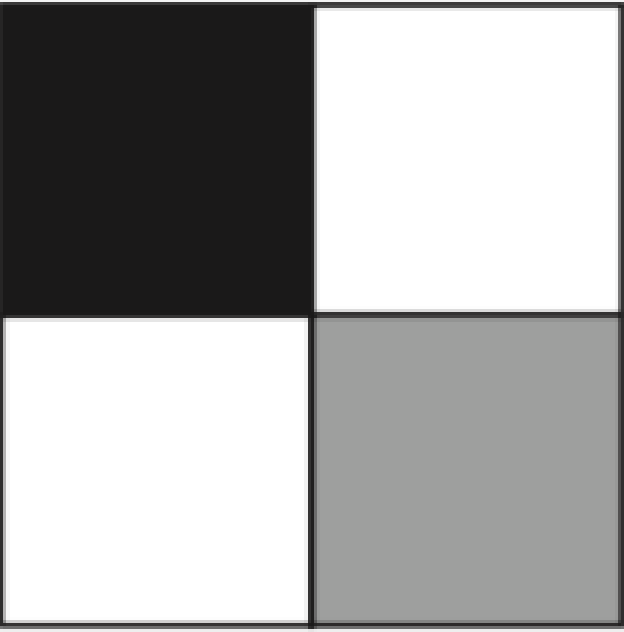
Exercise 1-3: Reverse engineer a list of primitive shape drawing instructions for the diagram below.



Note: There is more than one correct answer!

```
point(1,1);  
  
line(0,9,5,4);  
  
line(1,5,1,9);  
  
rectMode(CORNER); rect(4,1,6,3);  
  
ellipseMode(CORNER); ellipse(6,7,4,3);
```

Exercise 1-4: Try to guess what the instructions would be for the following screenshot.



```
background(255);  
  
stroke(0);  
  
fill(0);  
  
rect(0,0,50,50);  
  
stroke(0);  
  
fill(200);  
  
rect(50,50,50,50);
```

Exercise 1-5: Complete the following program. Guess what RGB values to use (you will be able to check your results in Processing after reading the next chapter). You could also use the color selector, shown in Figure 1.19.



```
fill(0,0,255);  
ellipse(20,40,16,16);  
  
fill(127,0,127);  
ellipse(40,40,16,16);  
  
fill(255,255,0);  
ellipse(60,40,16,16);
```

Bright blue

Dark purple

Yellow

Exercise 1-6: What color will each of the following lines of code generate?



```
fill(0,100,0);  
fill(100);  
stroke(0,0,200);  
stroke(225);  
stroke(255,255,0);  
stroke(0,255,255);  
stroke(200,50,50);
```

dark green
dark gray
medium blue
white
yellow
cyan
persian red

Exercise 1-7: Design a creature using simple shapes and colors. Draw the creature by hand using only points, lines, rectangles, and ellipses. Then attempt to write the code for the creature, using the Processing commands covered in this chapter: **point()**, **lines()**, **rect()**, **ellipse()**, **stroke()**, and **fill()**. In the next chapter, you will have a chance to test your results by running your code in Processing.



```
ellipseMode(CENTER);  
rectMode(CENTER);  
fill(0);  
stroke(0);  
rect(40,40,20,40);  
ellipse(50,30,30,30);  
fill(255);  
ellipse(40,25,5,5);  
ellipse(60,25,5,5);  
line(40,50,20,70);  
line(60,50,80,70);  
line(45,75,40,95);  
line(55,75,60,95);
```

