

MediaArt Programming

20210726

講義概要

- ・開発言語はJavaScript
- ・キャンバスにスケッチを描くように動くアート作品を作ります
- ・短いコードでも華やかなビジュアルを作り出せるため、初心者でも楽しみながら身につけることができます。
- ・自分の世界観をアート作品として表現しながら、創造力を高め、プログラミングにのめり込んでいきましょう



p5*js

A screenshot of a web browser displaying the p5.js homepage. The browser interface includes standard controls like back/forward, search, and a menu bar. The page itself features a large red 'p5.js' logo at the top left. To its right are language selection links ('English' and 'Español') and a small green icon. The main content area has a light gray background. On the left, a vertical sidebar lists navigation links in red: Home, Editor, Download, Donate, Get Started, Reference, Libraries, Learn, Teach, Examples, and Books. The 'Home' link is currently active. The central content area contains a large 'Hello!' heading, a search bar with the placeholder 'Search p5js.org', and two descriptive paragraphs about the library's purpose and functionality. At the bottom, there's a call-to-action button with the text 'Start creating with the p5 Editor!'. The overall design is clean and modern.

home | p5.js

English Español

p5.js

Home

Editor

Download

Donate

Get Started

Reference

Libraries

Learn

Teach

Examples

Books

Hello!

p5.js is a JavaScript library for creative coding, with a focus on making coding accessible and inclusive for artists, designers, educators, beginners, and anyone else! p5.js is free and open-source because we believe software, and the tools to learn it, should be accessible to everyone.

Using the metaphor of a sketch, p5.js has a full set of drawing functionality. However, you're not limited to your drawing canvas. You can think of your whole browser page as your sketch, including HTML5 objects for text, input, video, webcam, and sound.

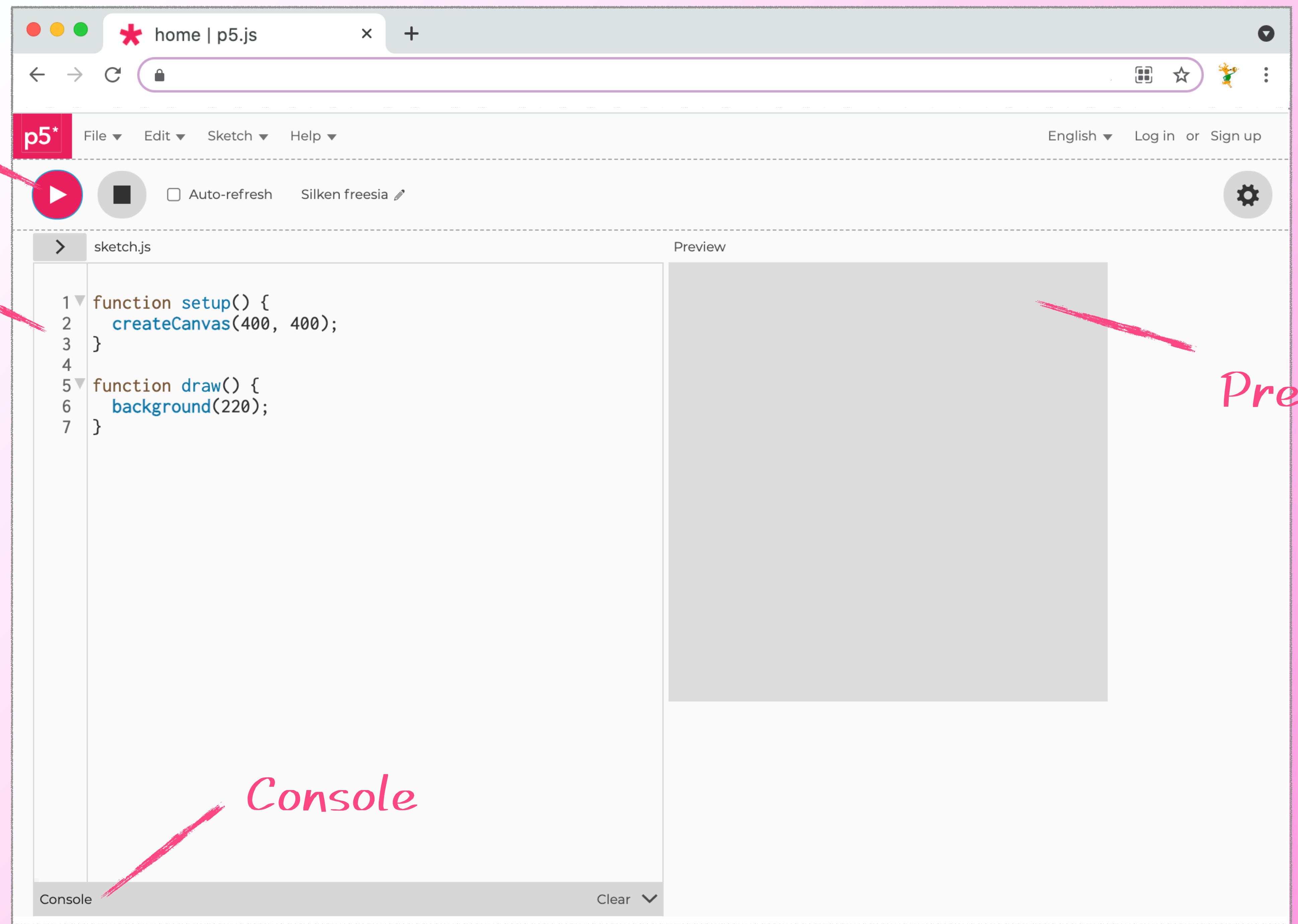
[Submit a project to the p5.js 2021 Showcase!](#)

Start creating with the p5 Editor!

The screenshot shows the p5.js web editor interface. At the top, there's a browser-style header with tabs, a search bar, and various icons. Below it is the p5.js logo and a navigation menu with links like 'File', 'Edit', 'Sketch', and 'Help'. On the right side of the header, there are language selection ('English'), login, and sign-up buttons. The main workspace is divided into two sections: 'sketch.js' on the left and 'Preview' on the right. In 'sketch.js', the following code is written:

```
1 function setup() {
2   createCanvas(400, 400);
3 }
4
5 function draw() {
6   background(220);
7 }
```

The 'Preview' section shows a light gray square, which is the result of the 'background(220)' command. At the bottom of the editor, there's a 'Console' tab and a 'Clear' dropdown menu.



本日の内容

- p5.js (JavaScript)に慣れる
- 基本図形の描写
 - point, line, ellipse, rect, triangle, circle
- 色や表現の工夫
 - canvas, fill, stroke, background

① point

```
> sketch.js•  
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5 function draw() {  
6   background(220);  
7  
8   point(100, 200);  
9  
10 }
```

② line

```
> sketch.js•  
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5 function draw() {  
6   background(220);  
7  
8   line(100, 200, 150, 250);  
9  
10 }
```

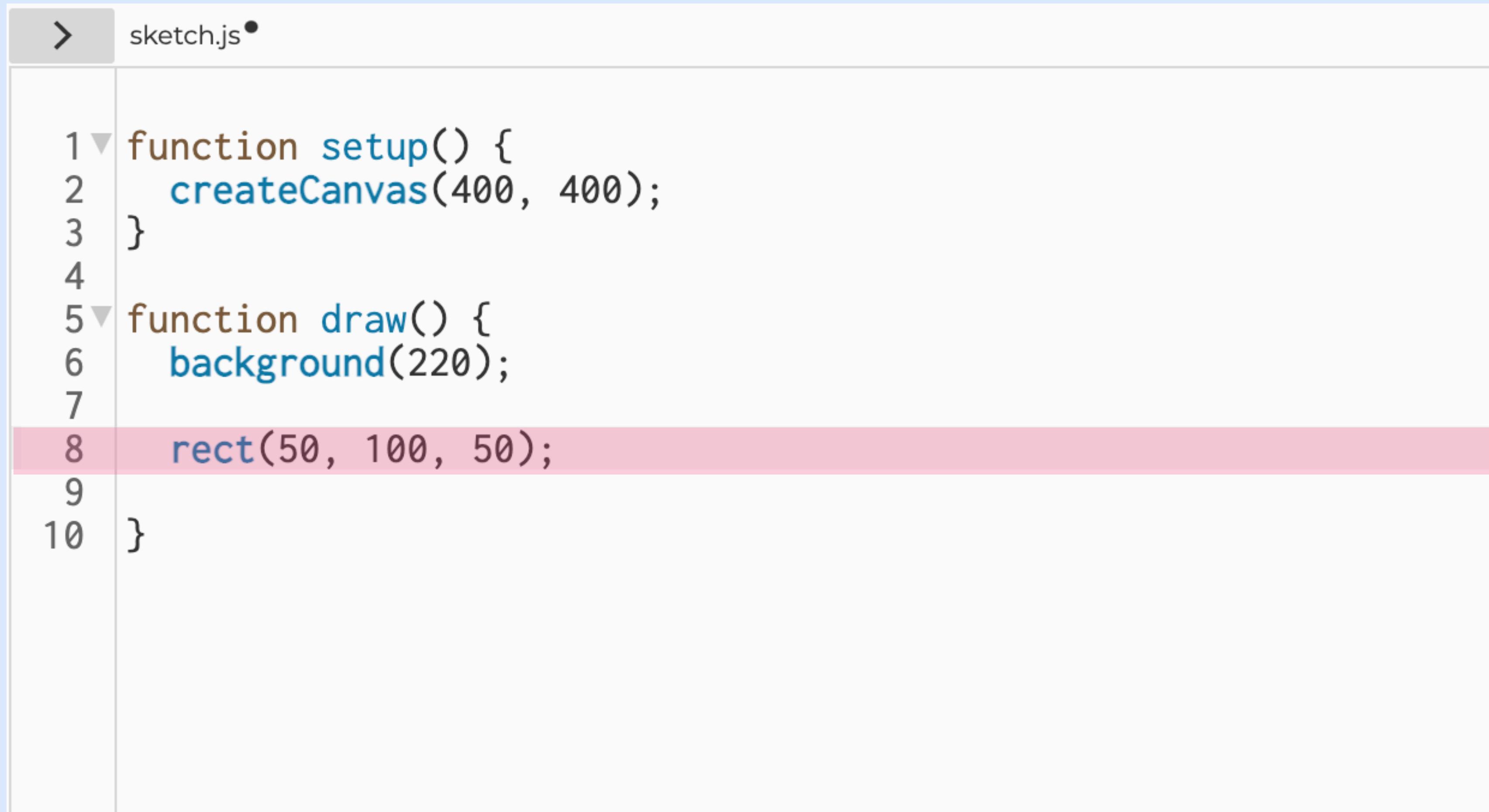
③ ellipse

```
> sketch.js•  
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5 function draw() {  
6   background(220);  
7  
8   ellipse(100, 200, 150);  
9  
10 }
```

③ ellipse_2

```
> sketch.js•  
  
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5 function draw() {  
6   background(220);  
7  
8   ellipse(100, 200, 150, 100);  
9 }
```

④ rect



The image shows a code editor window with a light blue background. In the top left corner, there is a grey button with a white right-pointing arrow icon. To its right, the file name "sketch.js" is displayed in a dark font, followed by a small black dot. The main area of the editor contains the following code:

```
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5 function draw() {  
6   background(220);  
7  
8   rect(50, 100, 50);  
9  
10 }
```

The line "rect(50, 100, 50);", which is line 8, is highlighted with a solid pink rectangular background.

④ rect_2

```
> sketch.js•  
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5 function draw() {  
6   background(220);  
7  
8   rect(50, 100, 50);  
9   rect(150, 100, 80, 100)  
10  
11 }
```

⑤ triangle

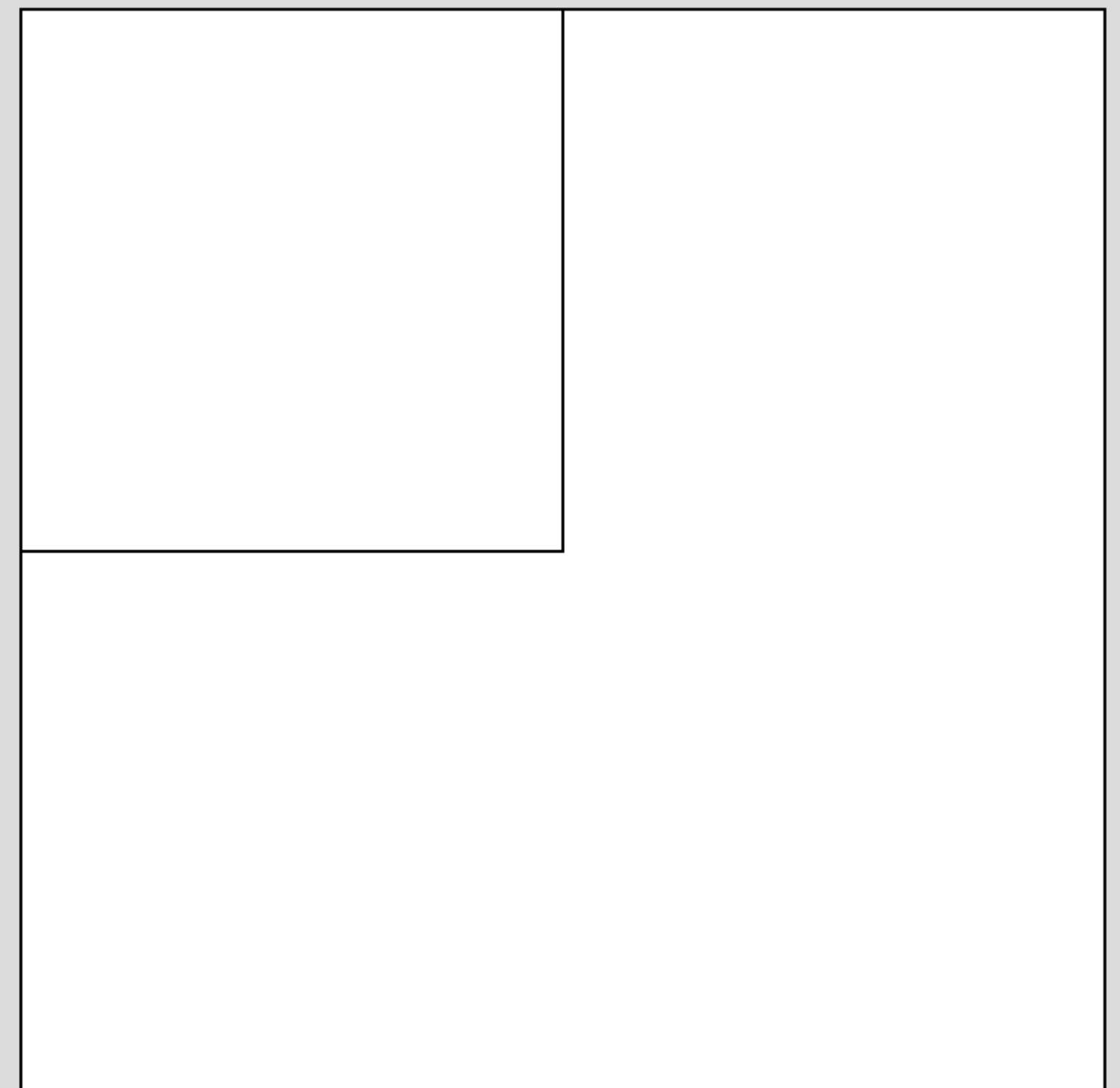
```
> sketch.js•  
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5 function draw() {  
6   background(220);  
7  
8   triangle(200, 100, 100, 270, 300, 270);  
9  
10 }
```

⑥ circle

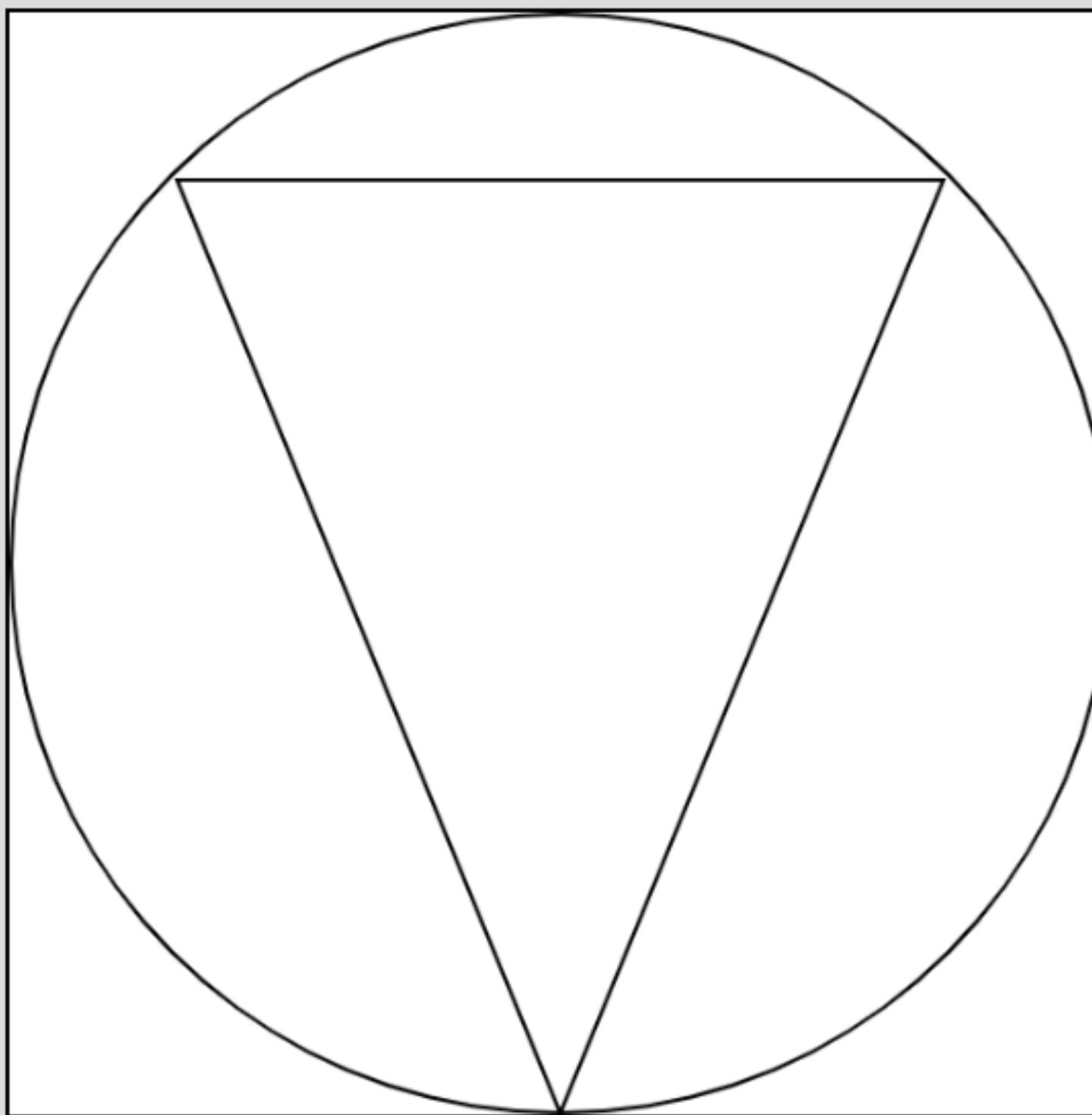
```
> sketch.js•  
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5 function draw() {  
6   background(220);  
7  
8   circle(200, 150, 100);  
9  
10 }
```

練習問題

Preview

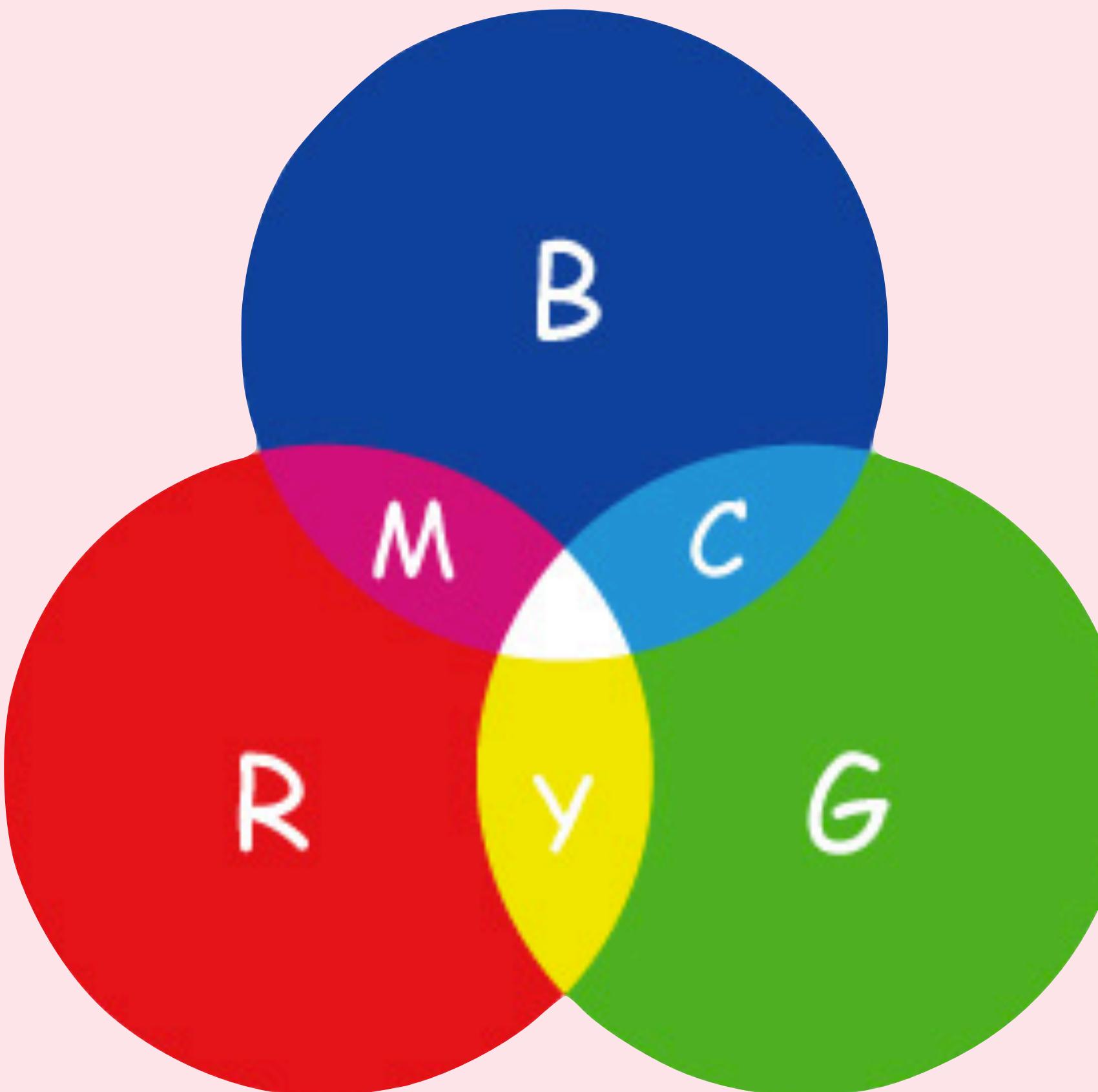


Preview

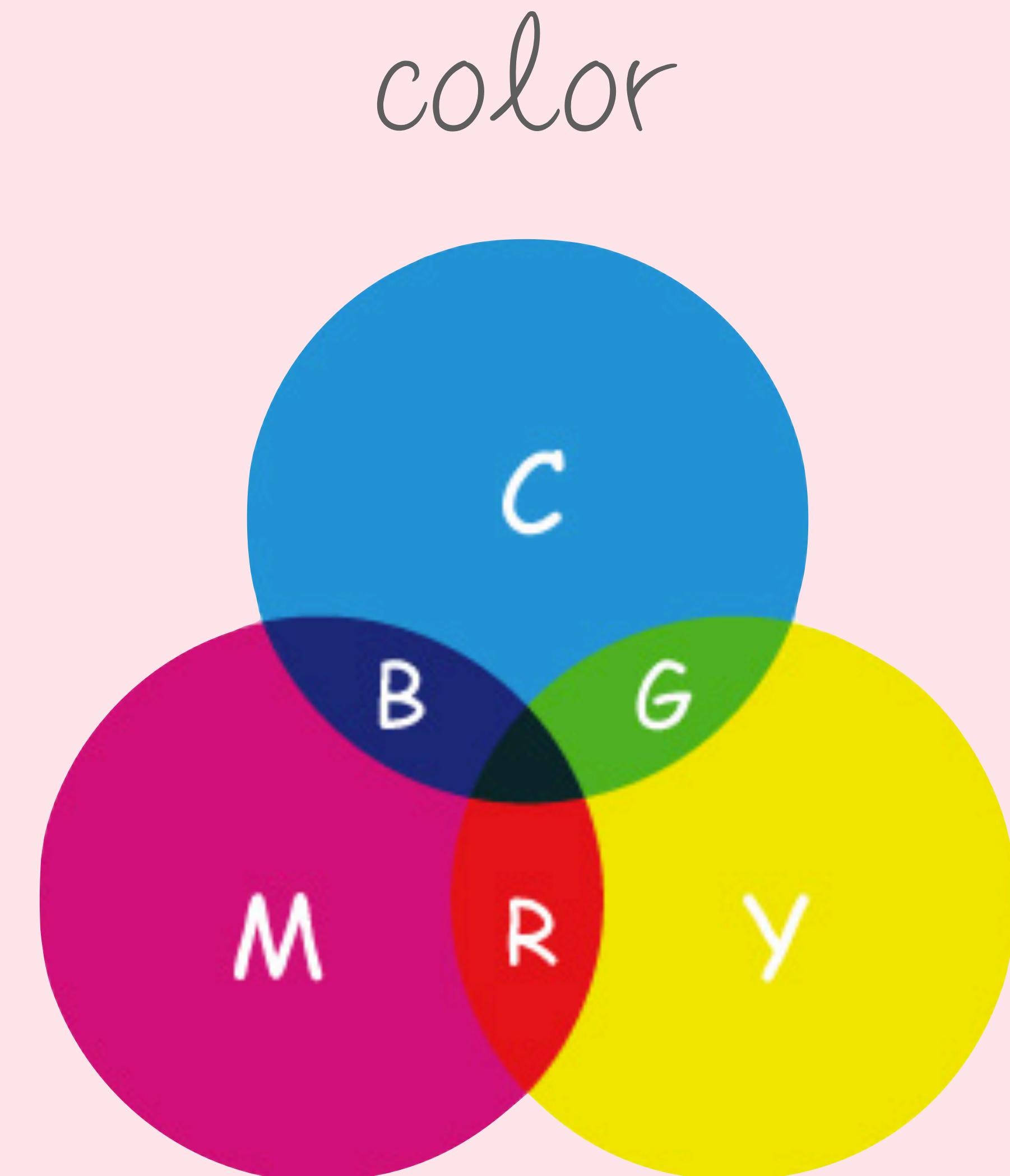


描けるかな？

⑦ fill



light



color

⑦ fill

```
fill ( <Rの値> , <Gの値> , <Bの値> );
```

The screenshot shows a code editor window with a tab labeled "sketch.js". The code is a simple Processing script:

```
function setup() {
  createCanvas(400, 400);
  fill(0, 255, 255);
}

function draw() {
  background(220);
  ellipse(100, 200, 150);
}
```

The line `fill(0, 255, 255);` is highlighted in pink, and the line `ellipse(100, 200, 150);` is also highlighted in pink, indicating they are the focus of the current lesson.

⑧ stroke

```
stroke ( <Rの値> , <Gの値> , <Bの値> );
```



The image shows a code editor window with a file named "sketch.js". The code is a simple Processing script. Line 4, which contains the "stroke" function call, is highlighted with a pink background. The code is as follows:

```
1 function setup() {  
2   createCanvas(400, 400);  
3  
4   stroke(0, 255, 255);  
5  
6 }  
7  
8  
9 function draw() {  
10   background(220);  
11  
12   ellipse(100, 200, 150);  
13  
14 }
```

⑧ stroke_2

stroke (<Rの値> , <Gの値> , <Bの値>);

```
> sketch.js•  
1▼ function setup() {  
2  createCanvas(400, 400);  
3  
4 noStroke();  
5  
6 }  
7  
8  
9▼ function draw() {  
10 background(220);  
11  
12 ellipse(100, 200, 150);  
13  
14 }
```

setup() / *draw()*

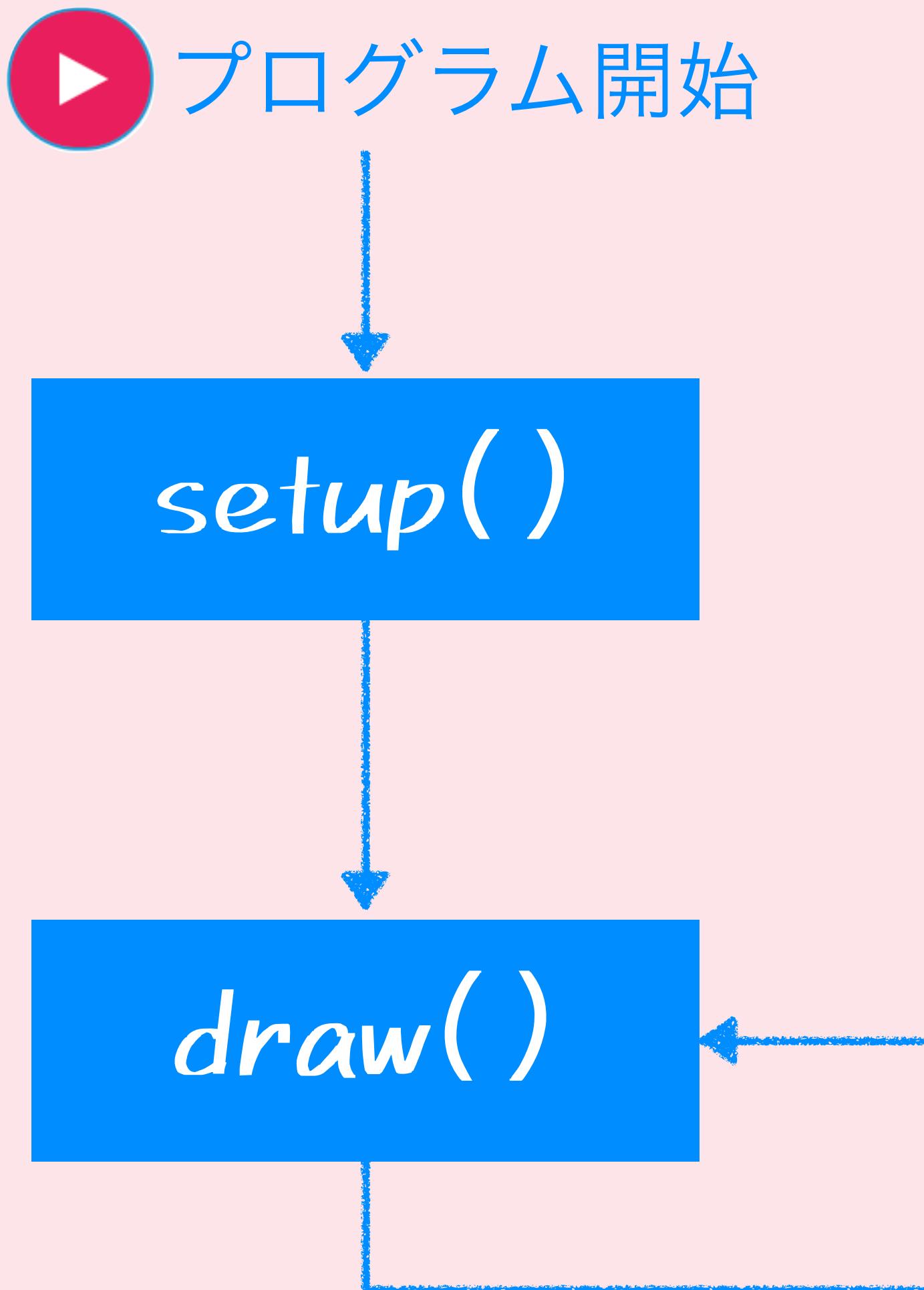


The image shows a code editor window with a single file named "sketch.js". The code is written in a pseudocode-like syntax, likely for a graphics library like p5.js. It contains two main functions: "setup()" and "draw()". The "setup()" function creates a canvas of size 400x400 pixels. The "draw()" function sets the background color to a light gray shade (220). The code is numbered from 1 to 11 on the left side.

```
> sketch.js•  
1▼ function setup() {  
2  createCanvas(400, 400);  
3 }  
4  
5  
6  
7  
8  
9▼ function draw() {  
10 background(220);  
11 }
```

setup() / *draw()*

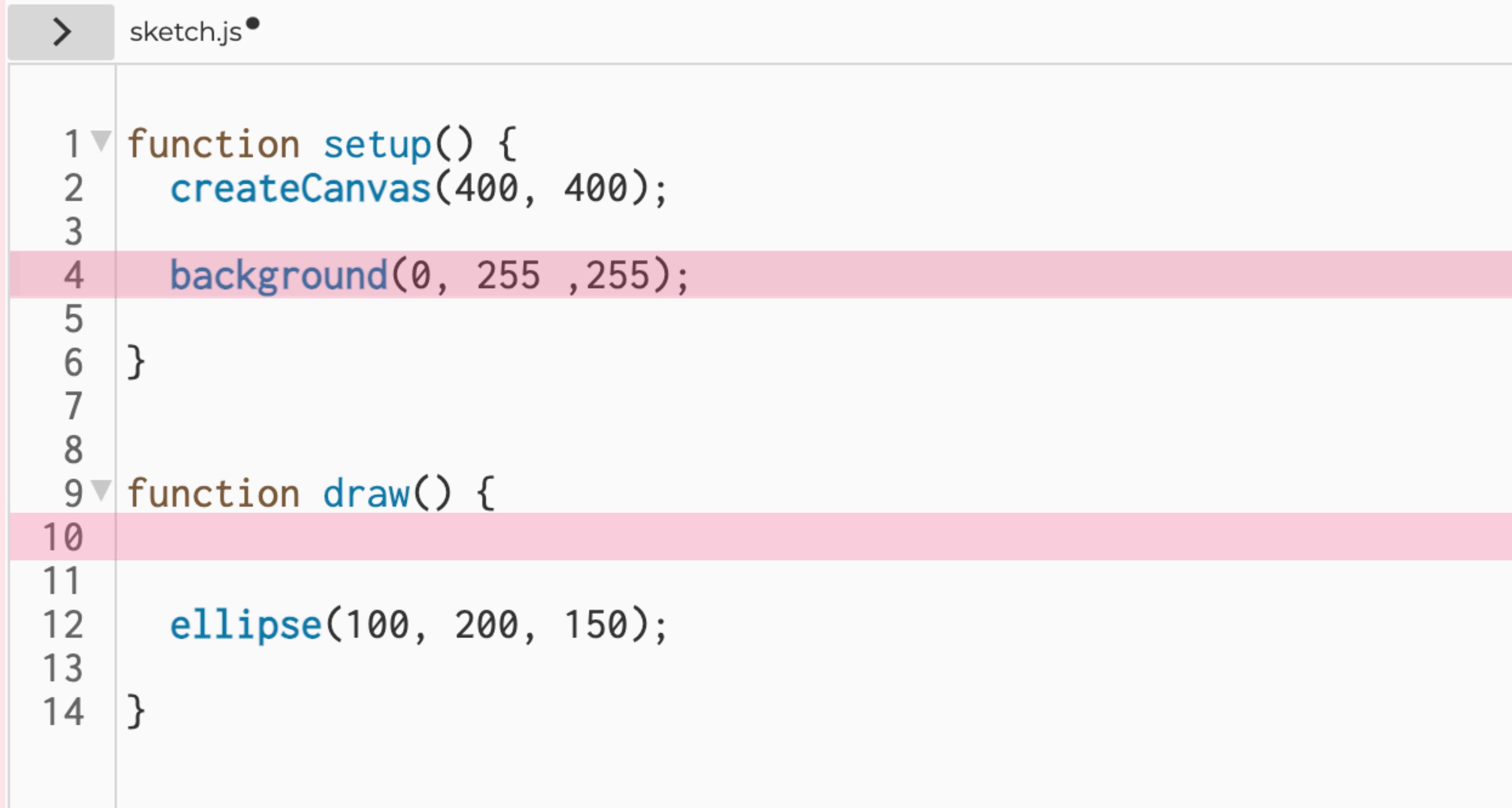
```
> sketch.js•  
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5  
6  
7  
8  
9 function draw() {  
10   background(220);  
11 }  
12
```



プログラムの終了まで
繰り返し

⑨ background

```
background ( <Rの値> , <Gの値> , <Bの値> );
```



The image shows a code editor window with the file name "sketch.js" in the title bar. The code is a simple Processing script:

```
> sketch.js •  
1 function setup() {  
2   createCanvas(400, 400);  
3  
4   background(0, 255, 255);  
5  
6 }  
7  
8  
9 function draw() {  
10  
11  
12   ellipse(100, 200, 150);  
13  
14 }
```

The line `background(0, 255, 255);` is highlighted with a pink background.

⑩ createCanvas

```
createCanvas ( < 横幅 > , < 高さ > );
```

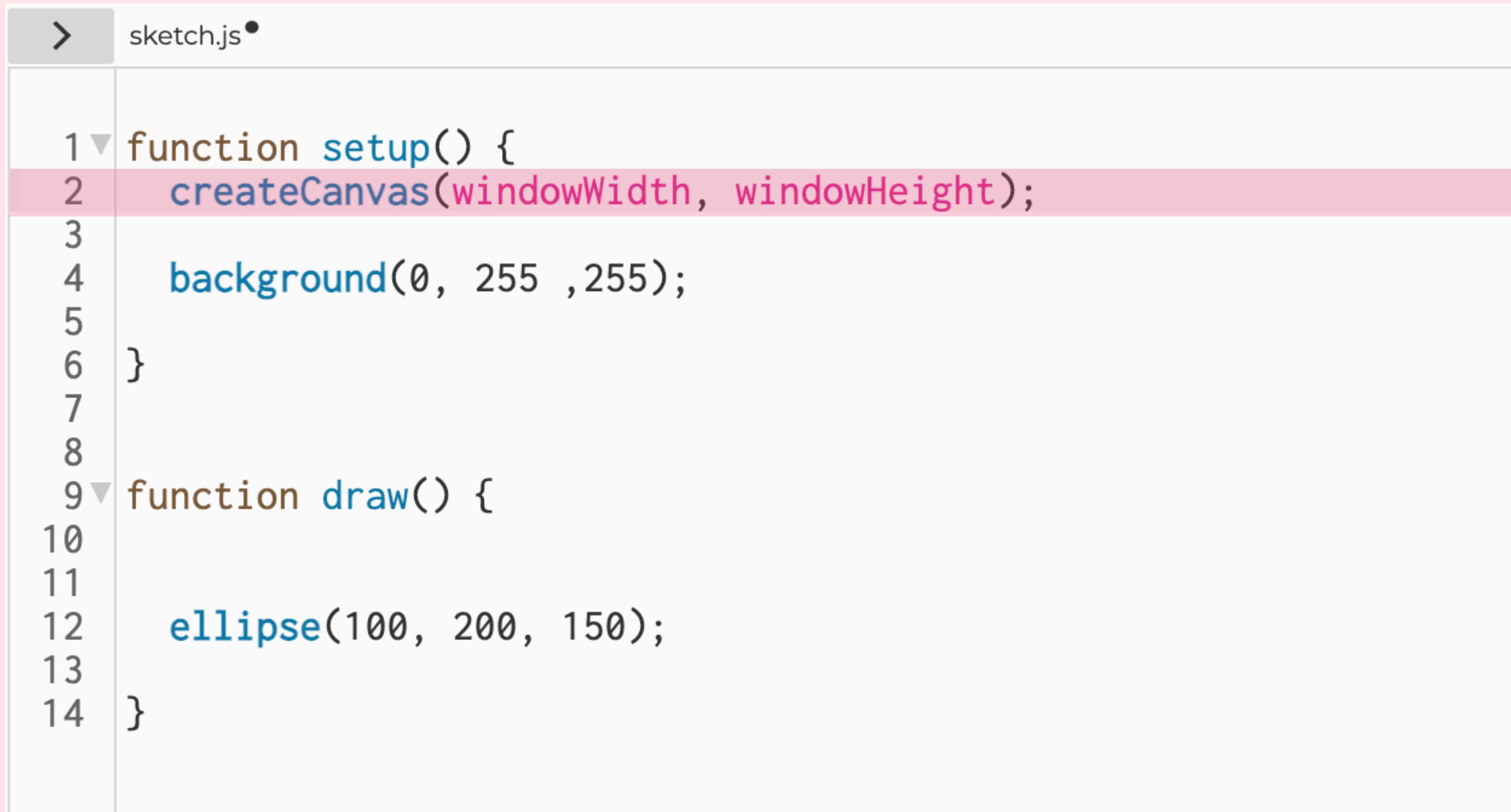
The screenshot shows a code editor window with a file named "sketch.js". The code is a simple Processing script:

```
> sketch.js•  
1 function setup() {  
2   createCanvas(800, 650);  
3  
4   background(0, 255, 255);  
5  
6 }  
7  
8  
9 function draw() {  
10  
11  
12   ellipse(100, 200, 150);  
13  
14 }
```

The line `createCanvas(800, 650);` is highlighted with a pink background, indicating it is the current line of interest.

⑩ createCanvas_2

```
createCanvas ( < 横幅 > , < 高さ > );
```

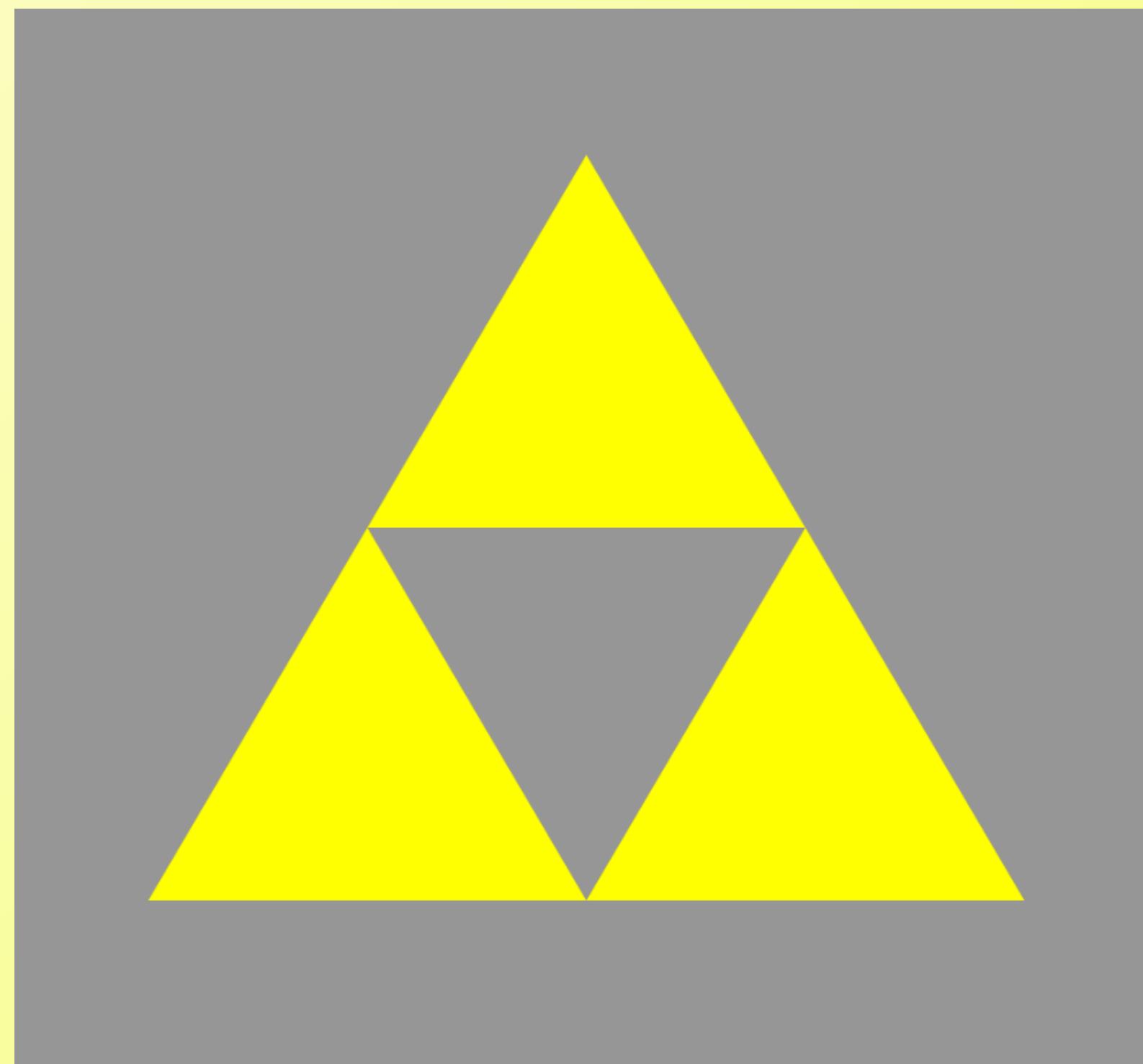
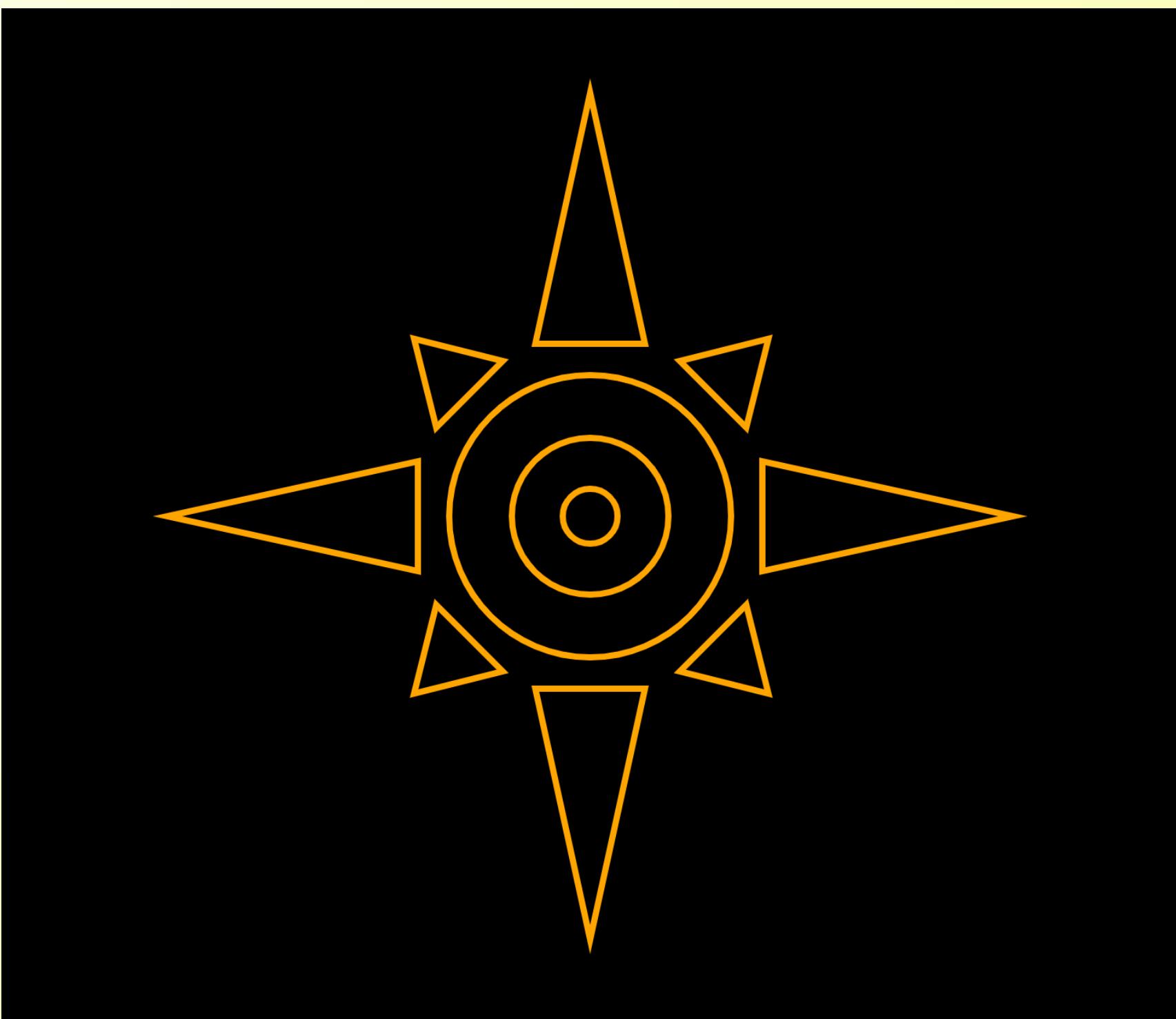


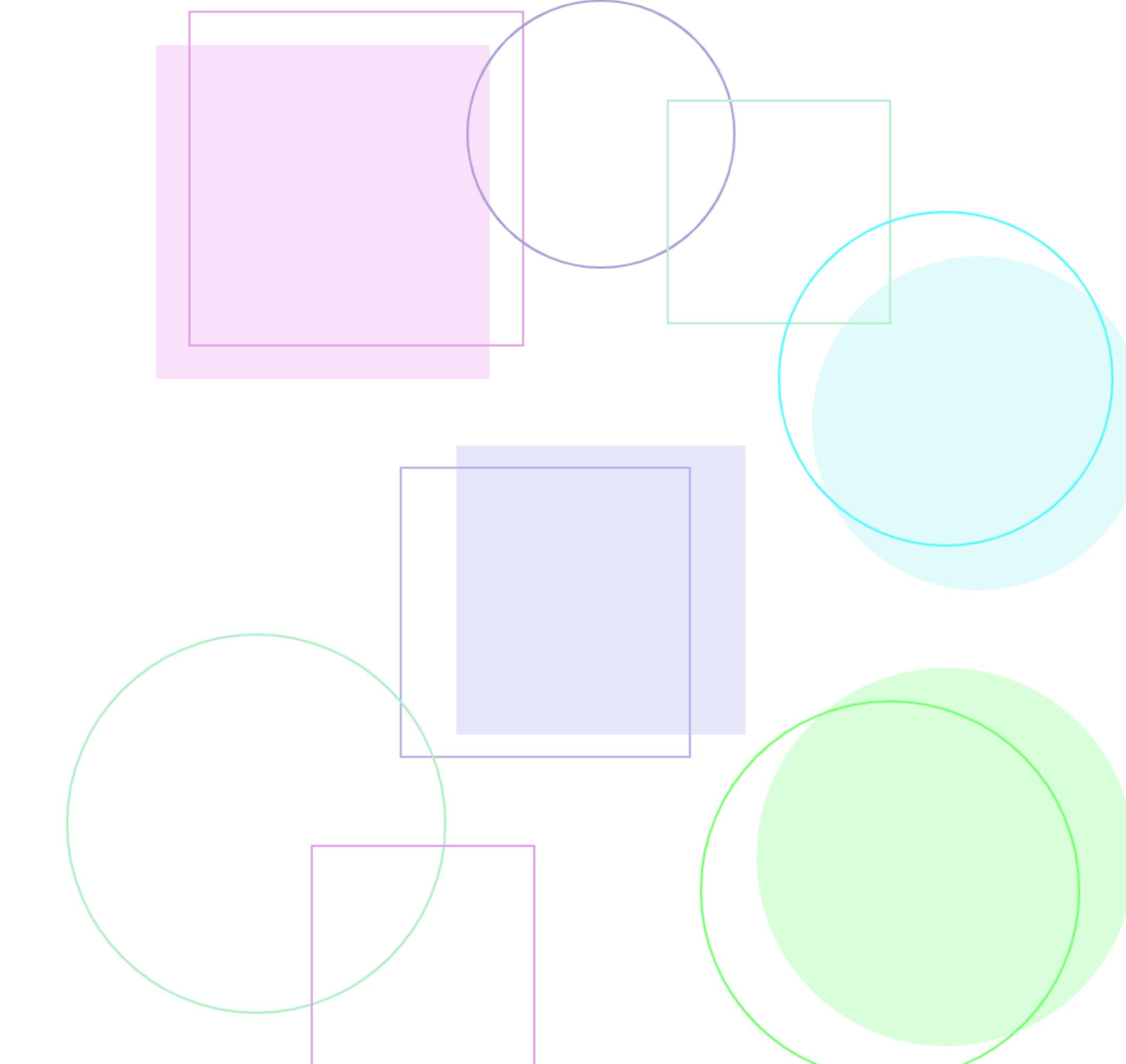
```
> sketch.js•  
1▼ function setup() {  
2  createCanvas(windowWidth, windowHeight);  
3  
4  background(0, 255, 255);  
5  
6 }  
7  
8  
9▼ function draw() {  
10  
11  
12  ellipse(100, 200, 150);  
13  
14 }
```

練習問題

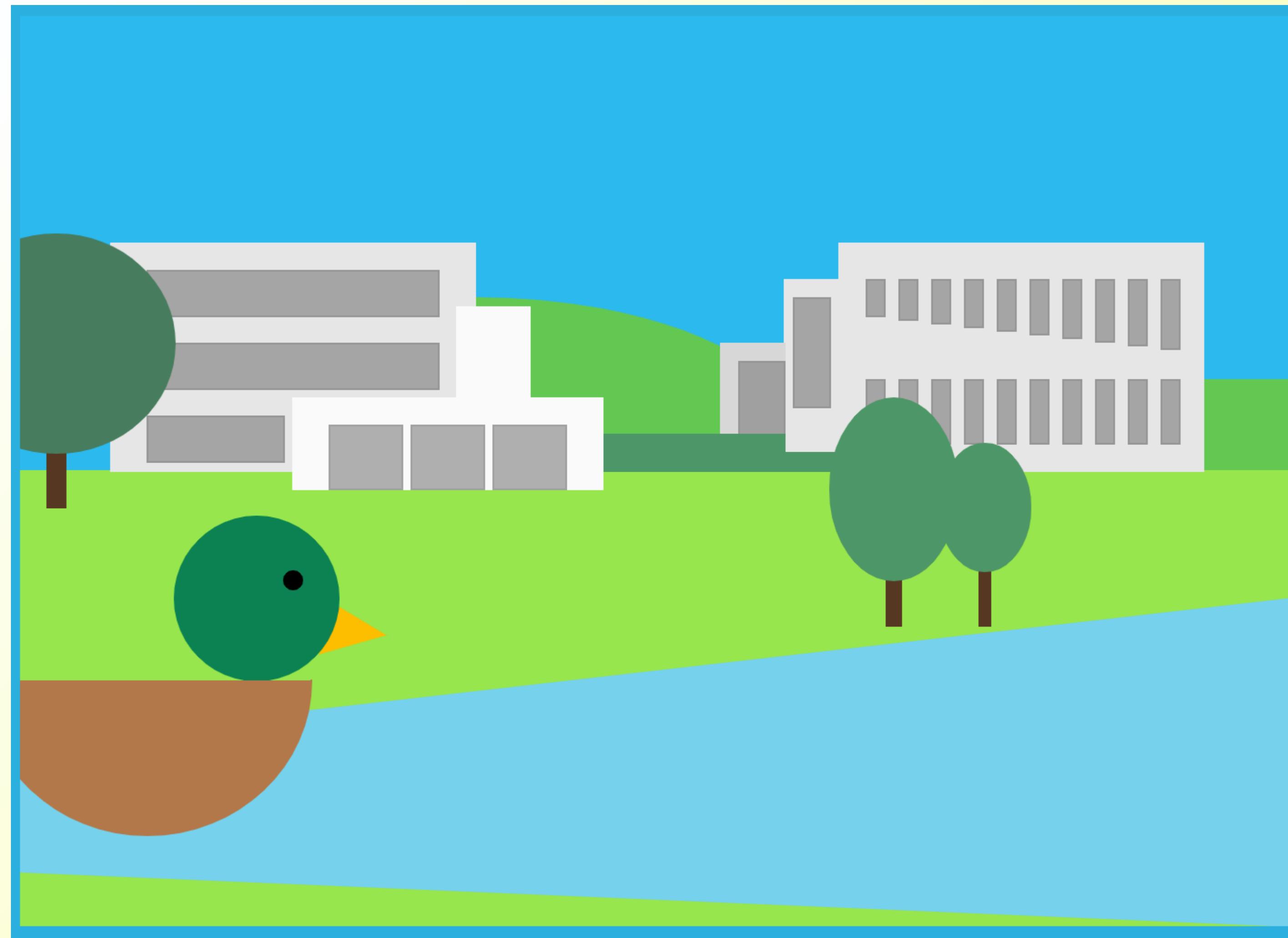
各自で好きな形、模様を描写してみよう

例えば...





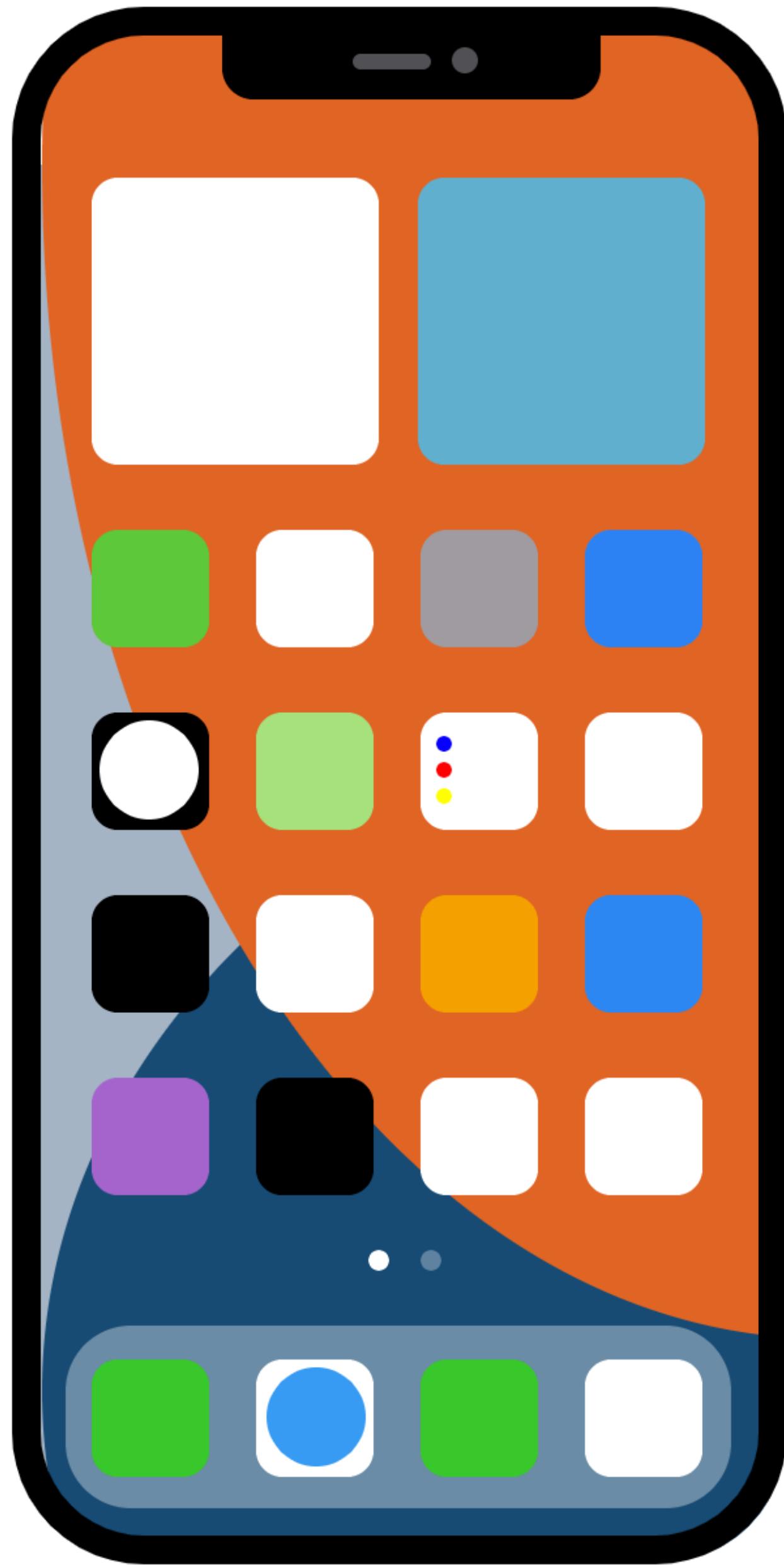
```
1 function setup() {
2   createCanvas(600, 600);
3 }
4
5 function draw() {
6   background(255); // 背景色
7   stroke(0, 0, 0, 0); // 線の色
8   fill(254, 229, 255); // 四角形の色
9   rect(100, 100, 150, 150); // 四角形を描画
10  fill(229, 253, 253); // 楕円の色
11  ellipse(470, 270, 150, 150); // 楕円を描画
12  fill(230, 231, 253); // 四角形の色
13  rect(235, 280, 130, 130); // 四角形を描画
14  fill(219, 255, 223); // 楕円の色
15  ellipse(455, 465, 170, 170); // 楕円を描画
16  fill(0, 0, 0, 0); // 四角形の色
17  stroke(232, 166, 234); // 線の色
18  rect(115, 85, 150, 150); // 四角形を描画
19  stroke(171, 159, 213); // 線の色
20  ellipse(300, 140, 120, 120); // 楕円を描画
21  stroke(187, 240, 211); // 線の色
22  rect(330, 125, 100, 100); // 四角形を描画
23  stroke(83, 252, 255); // 線の色
24  ellipse(455, 250, 150, 150); // 楕円を描画
25  stroke(187, 184, 232); // 線の色
26  rect(210, 290, 130, 130); // 四角形を描画
27  stroke(178, 240, 199); // 線の色
28  ellipse(145, 450, 170, 170); // 楕円を描画
29  stroke(119, 255, 113); // 線の色
30  ellipse(430, 480, 170, 170); // 楕円を描画
31  stroke(226, 168, 234); // 線の色
32  rect(170, 460, 100, 100); // 四角形を描画
33 }
```



```
1 function setup() {
2   createCanvas(700, 500);
3 }
4
5 function draw() {
6   background(48,185,240);
7
8   //木
9   stroke(102,204,82);
10  fill(102,204,82);
11  ellipse(250,230,350,150);
12  rect(650,200,50,50);
13
14   //草原
15   stroke(153,230,77);
16   fill(153,230,77);
17   quad(0,250,700,250,700,320,0,400);
18   triangle(0,470,700,500,0,500);
19
20   //鴨池
21   stroke(120,210,240);
22   fill(120,210,240);
23   quad(0,400,700,320,700,500,0,470);
24
25   //Ω館、メディア
26   stroke(230);
27   fill(230);
28   rect(450,125,200,125);
29   rect(420,145,30,105);
30   rect(50,125,200,125);
31 }
```



```
1 function setup() {
2   createCanvas(500, 500);
3 }
4
5 function draw() {
6   background(0,128,0);
7   stroke(255,255,255);
8   fill(255,255,255);
9   rect(125,75,250,350);
10  quad(125,425,375,425,425,500,175,500);
11  rect(375,330,30,50)
12  stroke(0,128,0)
13  fill(0,128,0);
14  ellipse(195,120,60,60);
15  quad(200,200,270,200,300,275,225,275);
16  quad(260,275,300,275,320,375,280,375);
17  rect(300,335,100,40);
18  quad(225,275,265,275,190,400,150,400);
19  quad(150,425,190,425,240,500,200,500);
20  rect(200,160,110,40);
21  quad(280,160,320,160,360,250,320,250);
22  quad(200,160,160,210,170,260,220,200);
23  rect(125,210,45,50)
24 }
```



```
1 function setup() {  
2   createCanvas(340, 640);  
3   noStroke();  
4 }  
5  
6 function draw() {  
7   background(255,255,255);  
8  
9   //bg grey  
10  fill(169,180,199);  
11  rect(0,80,150,500)  
12  
13  //bg blue  
14  fill(24,78,118);  
15  ellipse(381,550,700,550);  
16  
17  //bg orange  
18  fill(226,103,40);  
19  ellipse(331,80,600,900);  
20  
21  //white border  
22  noFill()  
23  strokeWeight(50);  
24  stroke(255,255,255);  
25  rect(0,0,340,640,70);  
26  
27  
28  
29  //frame  
30  noFill();  
31  strokeWeight(11);  
32  stroke(0,0,0);  
33  rect(25,25,286,586,45);  
36  noStroke();  
37  
38  //camera frame  
39  fill(0,0,0);  
40  rect(100,20,145,35,12);  
41  
42  //camera  
43  fill(81,82,86);  
44  circle(193,40,10);  
45  
46  //speaker  
47  fill(81,82,86);  
48  rect(150,37.5,30,6,5);  
49  
50  //apps  
51  
52  //highlight  
53  fill(255,255,255,90);  
54  rect(40,525,255,70,25);  
55  
56  //page  
57  fill(255,255,255);  
58  circle(160,500,8);  
59  fill(255,255,255,80);  
60  circle(180,500,8);  
61  
62  //calendar  
63  fill(255,255,255);  
64  rect(50,85,110,110,10);  
65  
66  //weather  
67  fill(100,176,207);  
68  rect(175,85,110,110,10);  
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```

//health
fill(255,255,255);
rect(176,430,45,45,10);

//home
fill(255,255,255);
rect(239,430,45,45,10);

//phone
fill(59,203,45);
rect(50,538,45,45,10);

//safari
fill(255,255,255);
rect(113,538,45,45,10);
fill(56,158,246);
circle(136,560,38);

//message
fill(59,203,48);
rect(176,538,45,45,10);

//music
fill(255,255,255);
rect(239,538,45,45,10);

//white line right
fill(255,255,255);
rect(330,0,10,640)