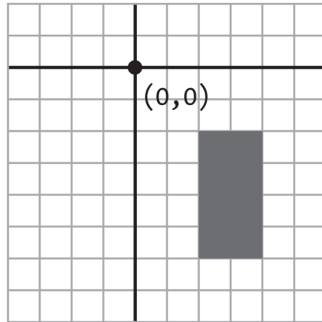


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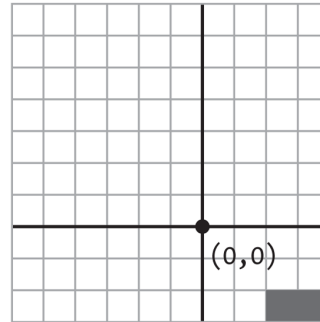
TRANSFORMATIONS: TRANSLATE, ROTATE, SCALE

These transformations change the screen coordinate system.

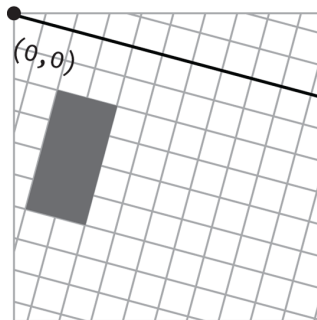
```
translate(40, 20);  
rect(20, 20, 20, 40);
```



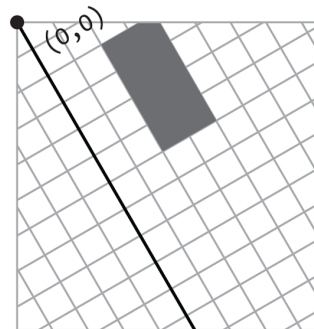
```
translate(60, 70);  
rect(20, 20, 20, 40);
```



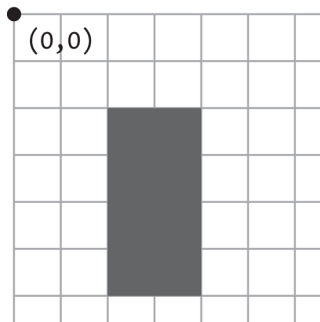
```
rotate(PI/12.0);  
rect(20, 20, 20, 40);
```



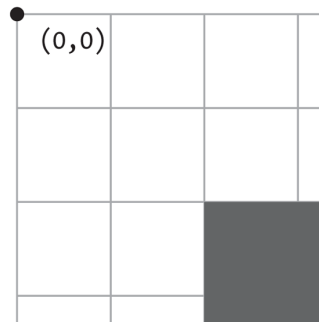
```
rotate(-PI/3);  
rect(20, 20, 20, 40);
```



```
scale(1.5);  
rect(20, 20, 20, 40);
```



```
scale(3);  
rect(20, 20, 20, 40);
```



These transformations are cumulative. For example, if `translate(0, 20)` is called twice, that would be the same as calling `translate(0, 40)` once. It is possible to undo transformations by inverting them. For example `rotate(PI/6)` can be undone by a `rotate(-PI/6)` if called before any other transformations. In a similar way, a `scale(2)` can be undone by a `scale(0.5)`. The order in which transformations are applied is important. A `translate(width/2, height/2)` followed by a `rotate(PI/6)` is different from a `rotate(PI/6)` followed by a `translate(width/2, height/2)`. Test this. You should also consult Chapter 6 of “Make: Getting Started with p5.js”.

Assignment in class

By using translations and rotations, obtain a similar effect to the one in `a1.mp4`. You should also use `rectMode(CORNER)` and `rectMode(CENTER)`.

The `push()` and `pop()` functions isolate the effects of transformations so that they do not affect drawing and other transformation calls. When `push()` is called, a copy of the current coordinate system is stored in memory, which is restored when `pop()` is called.

ASSIGNMENT 5

By using translations and rotations, as well as the `push()` and `pop()` functions, replicate the effect seen in `a2.mp4`.

READING FOR NEXT CLASS

Read chapter 7 of “Make: Getting Started with p5.js”.