

Reference > limit()

limit()

Limits a vector's magnitude to a maximum value.

The static version of `limit()`, as in `p5.Vector.limit(v, 5)`, returns a new `p5.Vector` object and doesn't change the original.

Examples

```
function setup() {  
  // Create a p5.Vector object.  
  let v = createVector(10, 20, 2);  
  
  // Limit its magnitude.  
  v.limit(5);  
  
  // Prints "p5.Vector Object : [2.227..., 4.454..., 0.445...]" to the  
  console.  
  print(v.toString());  
}
```

```
function setup() {  
  // Create a p5.Vector object.  
  let v0 = createVector(10, 20, 2);  
  
  // Create a copy an limit its magintude.  
  let v1 = p5.Vector.limit(v0, 5);  
  
  // Prints "p5.Vector Object : [2.227..., 4.454..., 0.445...]" to the  
  console.  
  print(v1.toString());  
}
```



```
function setup() {  
  createCanvas(100, 100);  
  
  describe("A red and blue arrow extend from the center of a  
  circle. Both arrows follow the mouse, but the blue arrow never  
  crosses the circle's edge.");  
}  
function draw() {  
  background(240);  
  
  // Vector to the center.  
  let v0 = createVector(50, 50);  
  
  // Vector from the center to the mouse.  
  let v1 = createVector(mouseX - 50, mouseY - 50);  
  
  // Circle's radius.  
  let r = 25;  
  
  // Draw the red arrow.  
  drawArrow(v0, v1, 'red');  
  
  // Draw the blue arrow.  
  drawArrow(v0, v1.limit(r), 'blue');  
  
  // Draw the circle.  
  noFill();  
  circle(50, 50, r * 2);  
}  
  
// Draws an arrow between two vectors.
```

Syntax

`limit(max)`

`limit(v, max, [target])`

Parameters

max	Number: maximum magnitude for the vector.
v	p5.Vector: the vector to limit
target	p5.Vector: the vector to receive the result (Optional)

This page is generated from the comments in [src/math/p5.Vector.js](#) . Please feel free to edit it and submit a pull request!

Related References

add Adds to a vector's x, y, and z components.	angleBetween Calculates the angle between two vectors.	array Returns the vector's components as an array of numbers.	clampToZero Replaces the components of a p5.Vector that are very close to zero with zero.
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p5.js

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