setMag()

Sets a vector's magnitude to a given value.

The static version of `setMag()`, as in `p5.Vector.setMag(v, 10)`, returns a new p5.Vector object and doesn't change the original.

Examples

```
function setup() {
  // Create a p5.Vector object.
  let v = createVector(3, 4, 0);

  // Prints "5" to the console.
  print(v.mag());

  // Set its magnitude to 10.
  v.setMag(10);

  // Prints "p5.Vector Object : [6, 8, 0]" to the console.
  print(v.toString());
}
```

```
function setup() {
  // Create a p5.Vector object.
  let v0 = createVector(3, 4, 0);

  // Create a copy with a magnitude of 10.
  let v1 = p5.Vector.setMag(v0, 10);

  // Prints "5" to the console.
  print(v0.mag());

  // Prints "p5.Vector Object : [6, 8, 0]" to the console.
  print(v1.toString());
}
```

```
function setup() {
  createCanvas(100, 100);

  describe('Two arrows extend from the top left corner of a
square toward its center. The red arrow reaches the center and
the blue arrow only extends part of the way.');
}

function draw() {
  background(240);

  let origin = createVector(0, 0);
  let v = createVector(50, 50);

  // Draw the red arrow.
  drawArrow(origin, v, 'red');

  // Set v's magnitude to 30.
  v.setMag(30);

  // Draw the blue arrow.
  drawArrow(origin, v, 'blue');
}

// Draws an arrow between two vectors.
function drawArrow(base, vec, myColor) {
  push();
  stroke(myColor);
  strokeWeight(3);
  fill(myColor);
  translate(base.x, base.y);
```

Syntax

```
setMag(len)
```

```
setMag(v, len, [target])
```

Parameters

len	Number: new length for this vector.
v	p5.Vector: the vector to set the magnitude of
target	p5.Vector: the vector to receive the result (Optional)

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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.