

angleBetween()

Calculates the angle between two vectors.

The angles returned are signed, which means that `v1.angleBetween(v2) === -v2.angleBetween(v1)`.

If the vector was created with `createVector()`, `angleBetween()` returns angles in the units of the current `angleMode()`.

Examples

```
function setup() {
  // Create p5.Vector objects.
  let v0 = createVector(1, 0);
  let v1 = createVector(0, 1);

  // Prints "1.570..." to the console.
  print(v0.angleBetween(v1));

  // Prints "-1.570..." to the console.
  print(v1.angleBetween(v0));
}
```

```
function setup() {
  // Use degrees.
  angleMode(DEGREES);
  // Create p5.Vector objects.
  let v0 = createVector(1, 0);
  let v1 = createVector(0, 1);

  // Prints "90" to the console.
  print(v0.angleBetween(v1));

  // Prints "-90" to the console.
  print(v1.angleBetween(v0));
}
```

```
function setup() {
  // Create p5.Vector objects.
  let v0 = createVector(1, 0);
  let v1 = createVector(0, 1);

  // Prints "1.570..." to the console.
  print(p5.Vector.angleBetween(v0, v1));

  // Prints "-1.570..." to the console.
  print(p5.Vector.angleBetween(v1, v0));
}
```

```
function setup() {
  // Use degrees.
  angleMode(DEGREES);

  // Create p5.Vector objects.
  let v0 = createVector(1, 0);
  let v1 = createVector(0, 1);

  // Prints "90" to the console.
  print(p5.Vector.angleBetween(v0, v1));

  // Prints "-90" to the console.
  print(p5.Vector.angleBetween(v1, v0));
}
```

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

  describe('Two arrows extend from the center of a gray square. A red arrow points to the right and a blue arrow points down. The text "Radians: 1.57" and "Degrees: 90" is written above the arrows.');
}

function draw() {
  background(200);

  // Create p5.Vector objects.
  let v0 = createVector(50, 50);
  let v1 = createVector(30, 0);
  let v2 = createVector(0, 30);

  // Draw the red arrow.
  drawArrow(v0, v1, 'red');

  // Draw the blue arrow.
  drawArrow(v0, v2, 'blue');

  // Use radians.
  angleMode(RADIANS);

  // Display the angle in radians.
  let angle = round(v1.angleBetween(v2), 2);
  text(`Radians: ${angle}`, 20, 20);
}
```

Syntax

`angleBetween(value)`

`angleBetween(v1, v2)`

Parameters

`value` p5.Vector: x, y, and z components of a p5.Vector.
`v1` p5.Vector: the first vector.
`v2` p5.Vector: the second vector.

Returns

Number: angle between the vectors.

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 vector that are very close to zero with zero.

[copy](#) Copies the components of one vector to another.

[cross](#) Calculates the cross product of two vectors.

[dot](#) Calculates the dot product of two vectors.

[get](#) Returns the value of a vector's component.

[get](#) Returns the value of a vector's component.