

**pad(gamepadId: number): Gamepad** - returns the gamepad status object

**mix(obj1: object, obj2: object, ...): object** - shallow copy all properties of passed objects into a new object

**augment(target: object, obj1: object, ...)** - augment object by deeply copying properties from all supplied objects

**supplement(target: object, obj1: object, ...)** - supplement object by deeply copying missing properties from all supplied object

**before(obj: object, functionName: string, patchFunction: function)** - chain the supplied **patchFunction** before **obj.functionName**

**after(obj: object, functionName: string, patchFunction: function)** - chain the supplied **patchFunction** after **obj.functionName**

**chain(fn1: function, fn2: function): function** - returns a chain container function that applies both functions

**isFun(target: any): boolean** - determines if **target** is a function

**isObj(target: any): boolean** - determines if **target** is an object

**isString(target: any): boolean** - determines if **target** is a String

**isNumber(target: any): boolean** - determines if **target** is a Number

**isFrame(target: any): boolean** - determines if **target** is a Frame

**isArray(target: any): boolean** - determines if **target** is an Array

**isEmpty(target: any | object | array): boolean** - checks if the **target** object/array is empty

**abs(n: number): number** - returns the absolute value of **n**

**pow(n: number, p: number): number** - returns **n** raised to the power of **p**

**sqrt(n: number): number** - returns the positive square root of **n**

**min(n1: number, n2: number, ...: number): number** - returns the smallest of numbers

**max(n1: number, n2: number, ...: number): number** - returns the largest of numbers

**ceil(n: number): number** - returns the smallest integer greater than or equal to **n**

**floor(n: number): number** - returns the largest integer less than or equal to **n**

**round(n: number): number** - returns **n** rounded to the nearest integer

**sin(a: number/radians): number** - returns the sine of the angle **a**

**cos(a: number/radians): number** - returns the cosine of the angle **a**

**tan(a: number/radians): number** - returns the tangent of the angle **a**

**acos(n: number): number** - returns the arccosine of the number **n**

**asin(n: number): number** - returns the arcsine of the number **n**

**atan(n: number): number/radians** - returns the arctangent of the number **n**

**atan2(y: number, x: number): number/radians** - returns an angle whose tangent is  $y/x$

**rnd(n1: number, n2: number): number** - returns a pseudo-random number between [0..1] or between provided values

**RND(i1: number/integer, i2: number/integer): number** - returns a pseudo-random integer between provided values

**limit(v: number, n1: number, n2: number): number** - returns the **v** value limited by values of **n1** and **n2**

**within(v: number, n1: number, n2: number): boolean** - returns **true** if the value **v** is within the specified range.

**warp(v: number, n1: number, n2: number): number** - returns a value warped within the provided range

**lerp(start: number, stop: number, val: number, limitRange: boolean): number** - returns a value between 0..1 extrapolated to the range between **start..stop**

**vmap()**

**len(x: number, y: number): number** - returns the length of the vector **[x, y]**

**dist(x1: number, y1: number, x2: number, y2: number): number** - returns the distance between two points

**angleTo(x: number, y: number): number/radians** - returns the angle in radians between the vector **[x, y]** and OX

**bearing(x1: number, y1: number, x2: number, y2: number)** - returns the angle of direction vector from **[x1, y1]** to **[x2, y2]** in relation to OX axis

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**kill(node: Node)** - kill a node

**sfx(sound: AudioClip, volume: number[0..1], panorama: number[-1..1])** - play a sound effect

**sleep(t: number): Promise** - sleep for **t** seconds

**print(line: string)** - output a line on the text console

**input(message: string): Promise - string** - input a value form the text console

**ask(question: string): Promise - string** - ask a value in the most convenient way for the current mode

**say(message: string)** - show a message in the most convenient way for the current mode

**cls()** - clear the text console

**rx(n: number): number** - relative x coordinate, where **n** sets horizontal screenposition between [0..1]

**ry(n: number): number** - relative y coordinate, where **n** sets vertical screenposition between [0..1]

**save()** - save current drawing context state

**restore()** - restore previously saved drawing context state

**scale(horizontal: number, vertical: number)** - scale the drawing context by **horizontal** and **vertical** factors

**rotate(a: number)** - rotate the drawing context on the angle **a** (in radians)

**translate(x: number, y: number)** - translate drawing context to provided coordinates **x** and **y**

**clip(x: number, y: number, w: number, h: number)** - clip the drawing context to provided rectangular area

**smooth()** - draw images with anti-aliasing

**blocky()** - draw images without anti-aliasing (pixel-art mode!)

**alpha(alpha: number)** - set global alpha for drawing operations

**stroke(v: string/hex | number/integer | number/float , w: number/integer | number/float , u: number/integer | number/float , a: number/integer | number/float )** - set stroke mode and assign a line color

**lineWidth(width: number)** - set line width

**fill(fillColor)** - set fill mode and assign a fill color

**background(color)** - fills background with provided color

**line(x1: number, y1: number, x2: number, y2: number)** - draw a line between 2 provided points

**plot(x: number, y: number)** - draw a point with lineWidth as it's canvas size

**triangle(x1: number, y1: number, x2: number, y2: number, x3: number, y3: number)** - draw a triangle

**quad(x1: number, y1: number, x2: number, y2: number, x3: number, y3: number, x4: number, y4: number)** - draw a quad

**rect(x: number, y: number, w: number, h: number)** - draw a rectangle

**circle(x: number, y: number, r: number)** - draw a circle

**ellipse(x: number, y: number, verticalRadius: number, horizontalRadius: number, angle: number)** - draw an ellipse

**arc(x: number, y: number, radius: number, startAngle: number, endAngle: number)** - draw an arc centered at **x/y** with given **radius** and angles

**arc(x: number, y: number, radiusX: number, radiusY: number, rotation: number, startAngle: number, endAngle: number)** - draw an elliptical arc centered at **x/y**

**polygons** - draw a polygon from array of points

**moveTo(x: number, y: number)** - move to the next point of the shape

**lineTo(x: number, y: number)** - adds a line to current path

**arcTo(x1: number, y1: number, x2: number, y2: number, radius: number)** - adds an arc to

the current path using 2 provided control points and radius

**quadraticTo(controlPointX: number, controlPointY: number, x: number, y: number)** - adds a quadratic Bezier curve to current path

**bezierTo(controlPointX1: number, controlPointY1: number, controlPointX2: number, controlPointY2: number, x: number, y: number)** - adds a cubic Bezier curve to current path

**closePath()** - close current path

**shape()** - stroke or fill current shape according to assigned mode

**font(font: string/font | number/fontSize)** - set current font

**alignLeft()** - align text to the left

**alignCenter()** - align text to the center

**alignRight()** - align text to the right

**baseTop()** - base text on top

**baseMiddle()** - base text in the middle

**baseBottom()** - base text at the bottom

**text(text: string, x: number, y: number)** - draw text

**textWidth(text: string): number** - determine the width of provided text for current font settings

**textHeight(): number** - determine the height of text for current font settings

**image(image: Image, x: number, y: number, w: number, h: number, dx: number, dy: number, dw: number, dh: number)** - draw an image

**rgb(red: number[0..1], green: number[0..1], blue: number[0..1])** - get the hex string color representation of provided rgb floats

**rgba(red: number[0..1], green: number[0..1], blue: number[0..1], alpha: number[0..1])** - get the hex string color representation of provided rgba floats

**RGB(red: number[0..255], green: number[0..255], blue: number[0..255])** - get the hex string color representation of provided RGB integers

**RGBA(red: number[0..255], green: number[0..255], blue: number[0..255], alpha: number[0..255])** - get the hex string color representation of provided RGBA integers

**hsl(hue: number[0..1], saturation: number[0..1], lightness: number[0..1])** - get the hex string color representation of provided hsl floats

**hsla(hue: number[0..1], saturation: number[0..1], lightness: number[0..1], alpha: number[0..1])** - get the hex string color representation of provided hsla floats