

# Riesketcher

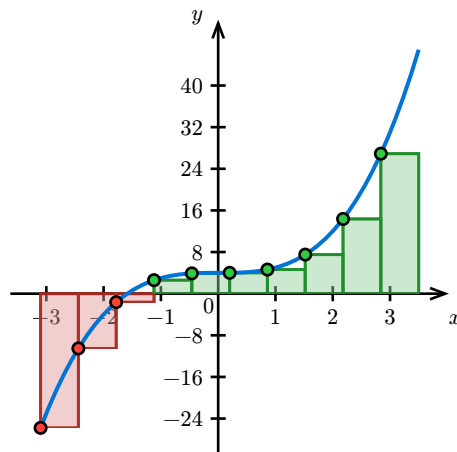
A package to draw Riemann sums (and their plots) of a function with CeTZ.

```
#import "@preview/riesketcher:0.2.0": riesketcher
```

## Examples

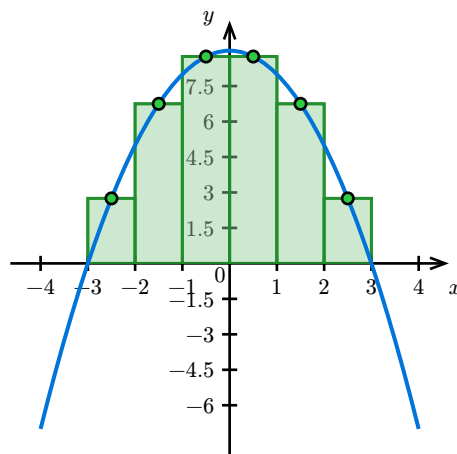
### Left-Hand Riemann sum

```
riesketcher(  
  x => calc.pow(x, 3) + 4,  
  method: "left",  
  start: -3.1,  
  end: 3.5,  
  n: 10,  
  plot-x-tick-step: 1,  
)
```



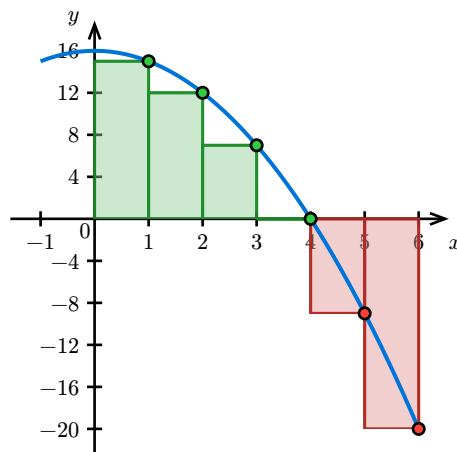
### Midpoint Riemann sum

```
riesketcher(  
  x => -calc.pow(x, 2) + 9,  
  method: "mid",  
  domain: (-4, 4),  
  start: -3,  
  end: 3,  
  n: 6,  
  plot-x-tick-step: 1,  
)
```



### Right-method Riemann sum

```
riesketcher(  
  x => 16 - x * x,  
  method: "right",  
  end: 6,  
  n: 6,  
  domain: (-1, auto),  
  plot-x-tick-step: 1,  
)
```



## Method parameters

### riesketcher

- riesketcher()

### riesketcher

Draw a Riemann sum of a function, and optionally plot the function.

### Parameters

```
riesketcher(  
    fn: function,  
    start: number,  
    end: number,  
    domain: array,  
    n: number,  
    y-scale: number,  
    method: string,  
    transparency: number,  
    dot-radius: number,  
    plot: boolean,  
    plot-grid: boolean,  
    plot-x-tick-step: number,  
    plot-y-tick-step: number,  
    positive-color: color,  
    negative-color: color,  
    plot-line-color: color,  
    size  
)
```

**fn**     `function`

The function to draw a Riemann sum of.

**start**     `number`

Where to start drawing bars.

Default: `0`

**end**     `number`

Where to end drawing bars.

Default: `10`

**domain**     `array`

Tuple of the domain of fn. If a tuple value is auto, that value is set to start/end.

Default: `(auto, auto)`

**n**    number

Number of bars

Default: 10

**y-scale**    number

Y scale of bars.

Default: 1

**method**    string

Where points are derived from. Can be “left”, “mid”/“midpoint”, or “right”.

Default: "left"

**transparency**    number

Transparency fill of bars.

Default: 40%

**dot-radius**    number

Radius of dots.

Default: 0.15

**plot**    boolean

Whether to add plot of the function.

Default: true

**plot-grid**    boolean

Show grid on plot.

Default: false

**plot-x-tick-step**    number

X tick step of plot.

Default: auto

**plot-y-tick-step**    number

Y tick step of plot.

Default: auto

**positive-color** color

Color of positive bars.

Default: `color.green`

**negative-color** color

Color of negative bars.

Default: `color.red`

**plot-line-color** color

Color of plotted line.

Default: `color.blue`

**size**

Default: `(5, 5)`