

Riesketcher

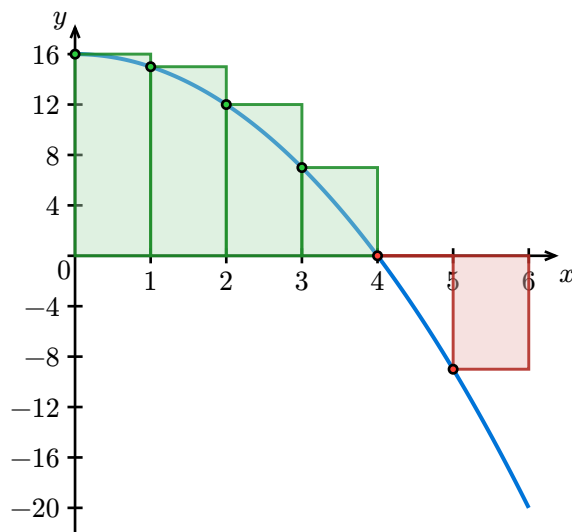
A package to draw Riemann sums (and their plots) of a function with CeTZ.

```
#import "@preview/riemann:0.1.0": riesketcher
```

Examples with $f(x) = 16 - x^2$

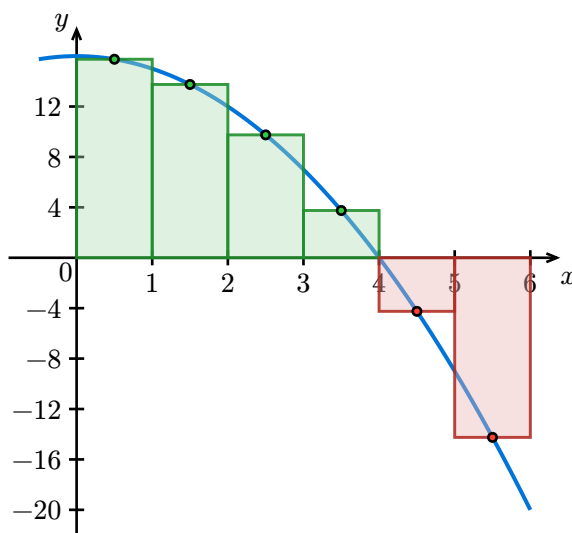
Left-hand Riemann sum

```
#riemann(  
  x => f(x) = 16 - x * x,  
  hand: "left",  
  end: 6,  
  n: 6,  
  y-scale: 6,  
  x-offset: 0,  
  plot-x-tick-step: 1,  
  y-offset: 10/3,  
)
```



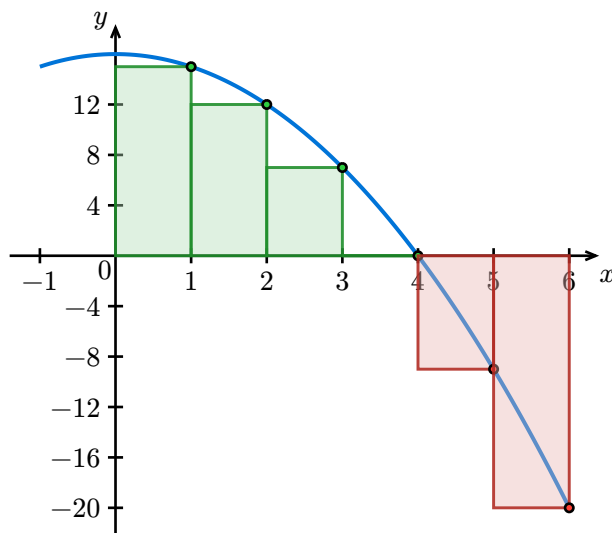
Midpoint Riemann sum

```
#riemann(  
  x => f(x) = 16 - x * x,  
  hand: "mid",  
  end: 6,  
  n: 6,  
  y-scale: 6,  
  x-offset: 0.5,  
  plot-x-tick-step: 1,  
  y-offset: 10/3,  
)
```



Right-hand Riemann sum

```
#riemann(  
  x => f(x) = 16 - x * x,  
  hand: "right",  
  end: 6,  
  n: 6,  
  y-scale: 6,  
  x-offset: 1,  
  plot-x-tick-step: 1,  
  y-offset: 10/3,  
)
```



Method parameters

Riemann

- `riemann()`

riemann

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

Parameters

```
riemann(  
  fn: function,  
  start: number,  
  end: number,  
  n: number,  
  y-scale: number,  
  x-offset: number,  
  y-offset: number,  
  hand: 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  
)
```

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`

n `number`

Number of bars (please make $\Delta x = 1$).

Default: `10`

y-scale number

Y scale of bars.

Default: **1**

x-offset number

X offset of bars.

Default: **0**

y-offset number

Y offset of bars.

Default: **0**

hand 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: **0.055**

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`