Connectors

$$
\begin{array}{ccc}
X & \longrightarrow & Y \\
\downarrow & \nearrow & \\
Z & &
\end{array}
$$

f

Arc connectors

from → to

20deg

0deg

−50deg

Matching math arrows

Compare to $\rightarrow$, $\Rightarrow$ $\Rrightarrow$ $\twoheadrightarrow$, $\hookrightarrow$, $\mapsto$.

Compare our output to the reference symbol in default math font.
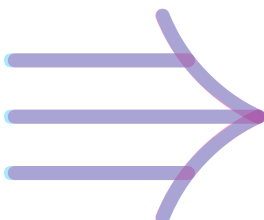
Double and triple lines

Diagram $A \xrightarrow{f} B$ and equation $A \to B$.

Diagram $A \overset{f}{\Longrightarrow} B$ and equation $A \Rightarrow B$.

Diagram $A \overset{f}{\Longrightarrow} B$ and equation $A \Rrightarrow B$.

Arrow head shorthands

$$\texttt{"->"} = \longrightarrow$$

$$\texttt{"<-"} = \longleftarrow$$

$$\texttt{">-<"} = \rightarrowtail\!\!\!\!\longleftarrow$$

$$\texttt{"<->"} = \longleftrightarrow$$

$$\texttt{"<=>"} = \Longleftrightarrow$$

$$\texttt{"<==>"} = \Longleftrightarrow$$

$$\texttt{"|->"} = \longmapsto$$

$$\texttt{"|=>"} = \Longmapsto$$

$$\texttt{">->"} = \rightarrowtail$$

$$\texttt{"<<->>"} = \twoheadleftarrow\!\!\!\longrightarrow\!\!\!\!\twoheadrightarrow$$

$$\texttt{">>-<<"} = \twoheadrightarrow\!\!\!\longleftarrow\!\!\!\!\twoheadleftarrow$$

$$\texttt{">>>-}>"} = \Rrightarrow\!\!\!\longrightarrow$$

$$\texttt{"hook->"} = \hookrightarrow$$

$$\texttt{"hook'--hook"} = \subset\!\cdots\!\supset$$

$$\texttt{"|=|"} = \models$$

$$\texttt{"||-||"} = \Vdash\!\!\!\longrightarrow\!\!\!\Vdash$$

$$\texttt{"|||-|||"} =$$

$$\texttt{"/--\\\\"} = $$

$$\texttt{"\\\\=\\\\"} = $$

$$\texttt{"/=/"} = $$

$$\texttt{"x-X"} = \times\!\!\!\longrightarrow\!\!\!\times$$

$$\texttt{">>-<<"} = \twoheadrightarrow\!\!\!\longleftarrow\!\!\!\twoheadleftarrow$$

$$\texttt{"harpoon-harpoon'"} = $$

$$\texttt{"harpoon'-<<"} = $$

$$\texttt{"<--hook'"} = \leftarrow\!\cdots\!\supset$$

$$\texttt{"|..|"} = $$

$$\texttt{"hooks--hooks"} = $$

$$\texttt{"o-0"} = \circ\!\!\!\longrightarrow\!\!\!\bigcirc$$

$$\texttt{"0-o"} = \bigcirc\!\!\!\longrightarrow\!\!\!\circ$$

$$\texttt{"*-@"} = \bullet\!\!\!\longrightarrow\!\!\!\bullet$$

$$\texttt{"o==0"} = $$

$$\texttt{"||->>"} = \Vdash\!\!\!\longrightarrow\!\!\!\twoheadrightarrow$$

$$\texttt{"<|-|>"} = \blacktriangleleft\!\!\!\longrightarrow\!\!\!\blacktriangleright$$

$$\texttt{"|>-<|"} = \blacktriangleright\!\!\!\longrightarrow\!\!\!\blacktriangleleft$$

$$\texttt{"-|-"} = \longrightarrow\!\!\!+\!\!\!\longleftarrow$$

$$\texttt{"hook-/->"} = \hookrightarrow\!\!\!/\!\!\!\longrightarrow$$

$$\texttt{"<{-}>"} = \blacktriangleleft\!\!\!\longrightarrow\!\!\!\blacktriangleright$$
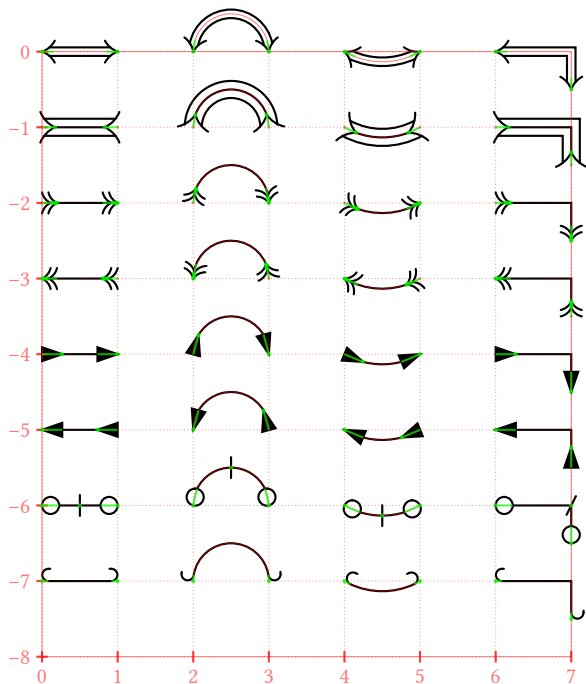
Bending arrows
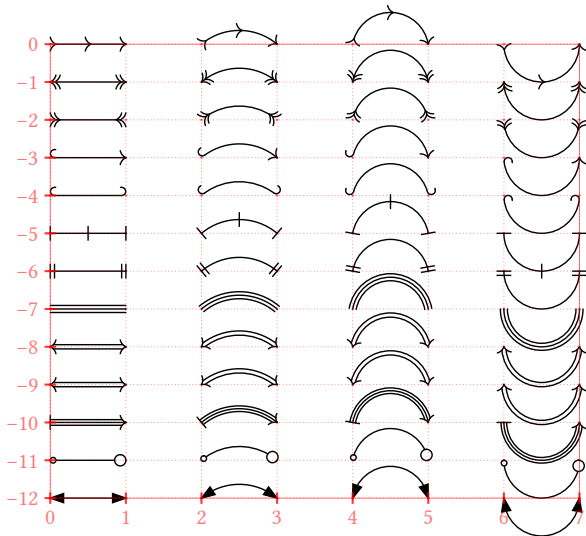
Fine mark angle corrections

Defocus adjustment

Automatic label placement

Default placement above the line.
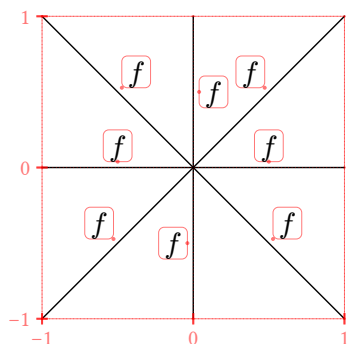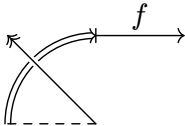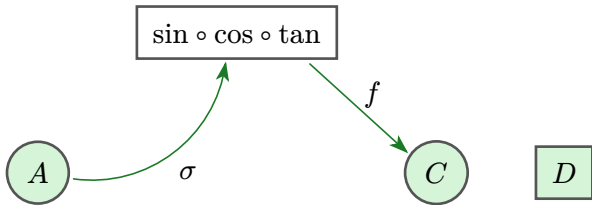

Reversed y-axis:
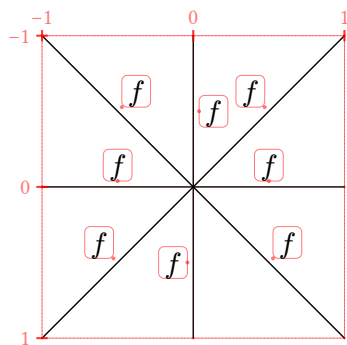
Crossing connectors
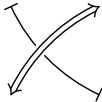
edge() argument shorthands

Diagram-level options

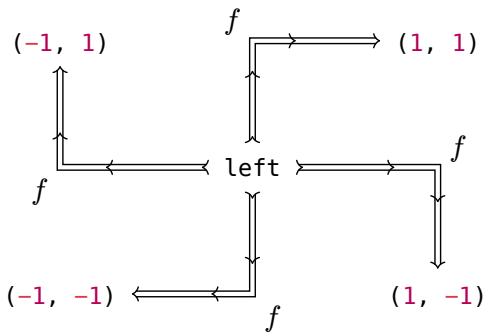# CeTZ integration

Bézier

A

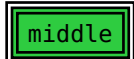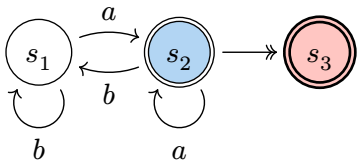# Node bounds, inset, and outset

0 `hello` ⟺ `there`
   0   1

Corner edges
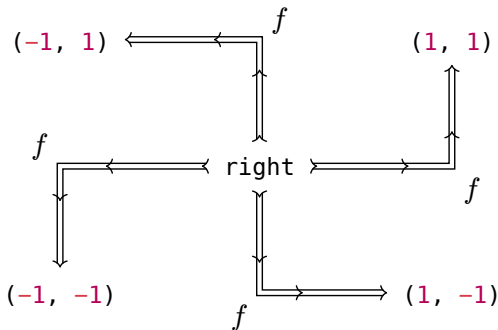
Double node strokes
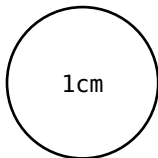

Relative and absolute extrusion lengths

Custom node sizes

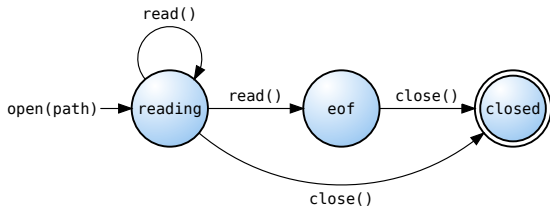Make sure provided dimensions are exact, not affected by node `inset`.

1cm

1cm

| width | height | both |

Example

Make sure node or edge labels don't pick up equation numbers!

$$a^2 \tag{1}$$

$$b^2 \tag{2}$$

Axes configuration

$(1,1)$

(ltr, btt)

$(0,0)$ $(1,0)$

$(1,0)$ $(1,1)$

(btt, ltr)

$(0,0)$

$(0,0)$ $(1,0)$

(ltr, ttb)

$(1,1)$

$(0,0)$

(ttb, ltr)

$(1,0)$ $(1,1)$

$(1,1)$

(rtl, btt)

$(1,0)$ $(0,0)$

$(1,1)$ $(1,0)$

(btt, rtl)

$(0,0)$

$(1,0)$ $(0,0)$

(rtl, ttb)

$(1,1)$

$(0,0)$

(ttb, rtl)

$(1,1)$ $(1,0)$
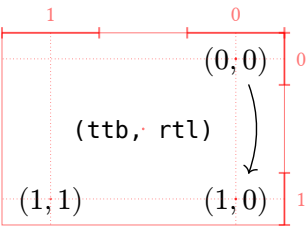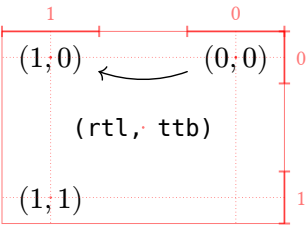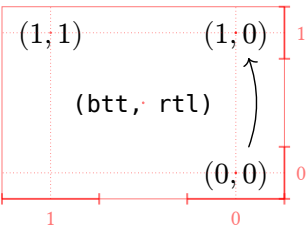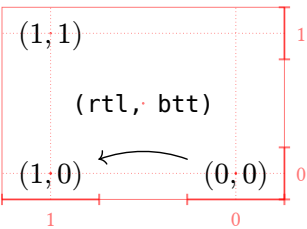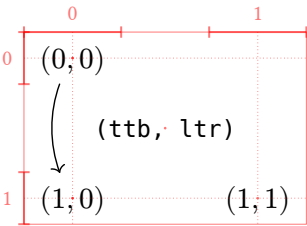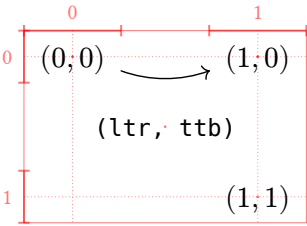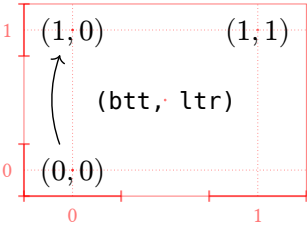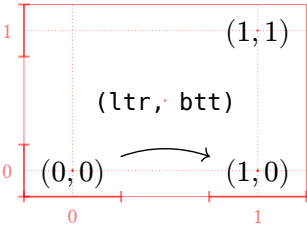
Implicit **from** and **to** points

$\xrightarrow{\text{label}} \xrightarrow{\text{label}} \xrightarrow{\text{label}}$

prev

next
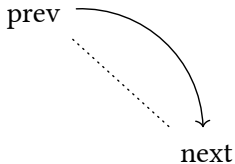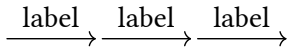
Edge positional arguments

Explicit named arguments versus implicit positional arguments.

Each row should be the same thing repeated.

$$A \longrightarrow B \qquad A \longrightarrow B \qquad A \longrightarrow B$$

$$A \xrightarrow{\pi} B \qquad A \xrightarrow{\pi} B \qquad A \xrightarrow{\pi} B$$

$$A \xmapsto{\tau} B \qquad A \xmapsto{\tau} B \qquad A \xmapsto{\tau} B$$

$$A \xtwoheadrightarrow{+} B \qquad A \xtwoheadrightarrow{+} B \qquad A \xtwoheadrightarrow{+} B$$

Symbol arrow aliases

Math	Unicode	Mark	Diagram
$\rightarrow$	$\rightarrow$	`->`	⟶
$\longrightarrow$	⯑	`->`	⟶
$\leftarrow$	$\leftarrow$	`<-`	⟵
$\leftrightarrow$	$\leftrightarrow$	`<->`	⟷
$\longleftrightarrow$	⯑	`<->`	⟷
$\twoheadrightarrow$	⯑	`->>`	⟶⟶
$\twoheadleftarrow$	⯑	`<<-`	⟵⟵
$\rightarrowtail$	⯑	`>->`	⟩⟶
$\leftarrowtail$	⯑	`<-<`	⟵⟨
$\Rightarrow$	$\Rightarrow$	`=>`	⟹
$\Longrightarrow$	⯑	`=>`	⟹
$\Leftarrow$	⯑	`<=`	⟸
$\Leftrightarrow$	$\Leftrightarrow$	`<=>`	⟺
$\Longleftrightarrow$	⯑	`<=>`	⟺
$\mapsto$	$\mapsto$	`|->`	⟼
$\Mapsto$	⯑	`|=>`	⟼⟹
$\rightsquigarrow$	⯑	none!	none!
$\leftsquigarrow$	⯑	none!	none!
$\hookrightarrow$		`hook->`	⟶
$\hookleftarrow$		`<-hook'`	⟵

Math-mode diagrams

The following diagrams should be identical:

$$
\begin{array}{ccc}
G & \xrightarrow{\ \ f\ \ } & \operatorname{im}(f) \\
\downarrow{\scriptstyle \pi} & \nearrow{\scriptstyle \tilde{f}} & \\
G/\ker(f) & &
\end{array}
$$

$$
\begin{array}{ccc}
G & \xrightarrow{\ \ f\ \ } & \operatorname{im}(f) \\
\downarrow{\scriptstyle \pi} & \nearrow{\scriptstyle \tilde{f}} & \\
G/\ker(f) & &
\end{array}
$$

```
?
(
  nodes: (
    (
      class: "node",
      pos: (0, 0),
      label: equation(body: [([A], [ ],
[ ])], block: false),
      inset: auto,
      outset: auto,
      size: (auto, auto),
      radius: auto,
      shape: auto,
      stroke: auto,
      fill: auto,
      corner-radius: auto,
      defocus: auto,
      extrude: (0,),
    ),
    (
      class: "node",
      pos: (1, 0),
      label: equation(body: [([ ],
[B])], block: false),
      inset: auto,
      outset: auto,
      size: (auto, auto),
      radius: auto,
      shape: auto,
      stroke: auto,
      fill: auto,
      corner-radius: auto,
      defocus: auto,
      extrude: (0,),
    ),
  ),
  edges: (
    (
      class: "edge",
      points: ((0, 0), (1, 0)),
      label: none,
      label-pos: 0.5,
      label-sep: auto,
      label-anchor: auto,
      label-side: auto,
      kind: auto,
      bend: 0deg,
      corner: none,
      stroke: (cap: "round", cap: none),
      marks: (
        (
          size: 7,
          sharpness: 24deg,
          delta: 54deg,
          outer-len: 4,
          pos: 1,
          rev: false,
          kind: "head",
        ),
      ),
      mark-scale: 100%,
      extrude: (0,),
      is-crossing-background: false,
      crossing-thickness: auto,
      crossing-fill: auto,
    ),
  ),
)
```