Connectors

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

Arc connectors

Matching math arrows

Compare to $\rightarrow$, $\Rightarrow$, $\Rrightarrow$, $\twoheadrightarrow$, $\hookrightarrow$, $\mapsto$.
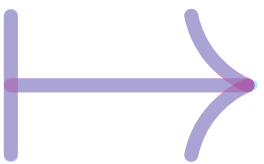
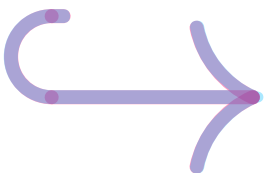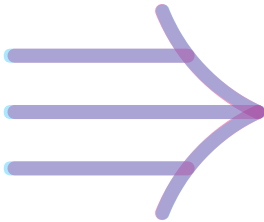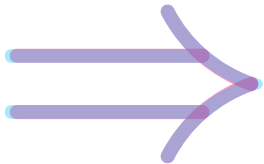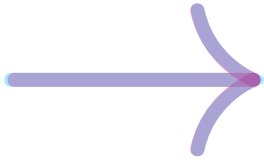# Double and triple lines

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

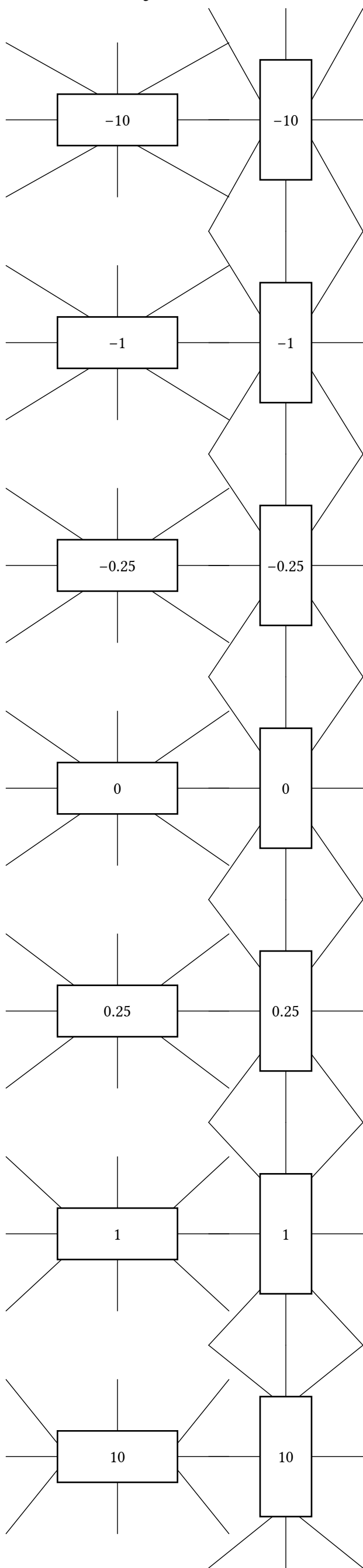|	
`"->"` $=$	$\longrightarrow$
`"<-"` $=$	$\longleftarrow$
`">-<"` $=$	$\rightarrowtail\!\!\!\!\!\longleftarrow$
`"<->"` $=$	$\longleftrightarrow$
`"<=>"` $=$	$\Longleftrightarrow$
`"<==>"` $=$	$\Longleftrightarrow$
`"|->"` $=$	$\longmapsto$
`"|=>"` $=$	$\Longmapsto$
`">->"` $=$	$\rightarrowtail$
`"<<->>"` $=$	$\twoheadleftarrow\!\!\!\longrightarrow\!\!\!\twoheadrightarrow$
`">>-<<"` $=$	$\twoheadrightarrow\!\!\!\longleftarrow\!\!\!\twoheadleftarrow$
`">>>-}>"` $=$	$\Rrightarrow\!\!\!\longrightarrow$
`"hook->"` $=$	$\hookrightarrow$
`"hook'--hook"` $=$	$\subset\!-\,-\,-\,-\,\supset$
`"|=|"` $=$	$\models\!\!\!=\!\!\!\mid$
`"||-||"` $=$	$\Vdash\!\!\!\longrightarrow\!\!\!\dashv\!\mid$
`"|||-|||"` $=$	$\Vvdash\!\!\!\longrightarrow\!\!\!\Vvdash$
`"/--\\"` $=$	$\nearrow\,-\,-\,-\,-\,\nwarrow$
`"\\=\\"` $=$	$\Longleftarrow$
`"/=/"` $=$	$\Longrightarrow$
`"x-X"` $=$	$\times\!\!\!\longrightarrow\!\!\!\times$
`">>-<<"` $=$	$\twoheadrightarrow\!\!\!\longleftarrow\!\!\!\twoheadleftarrow$
`"harpoon-harpoon'"` $=$	$\smile\!\!\!\longrightarrow$
`"harpoon'-<<"` $=$	$\rightharpoonup\!\!\!\longleftarrow\!\!\!\twoheadleftarrow$
`"<--hook'"` $=$	$\leftarrow\,-\,-\,-\,-\,\supset$
`"|..|"` $=$	$\mid\!\cdots\cdots\cdots\!\mid$
`"hooks--hooks"` $=$	$\subset\!-\,-\,-\,-\,\supset$
`"o-0"` $=$	$\circ\!\!\!\longrightarrow\!\!\!\bigcirc$
`"0-o"` $=$	$\bigcirc\!\!\!\longrightarrow\!\!\!\circ$
`"*-@"` $=$	$\bullet\!\!\!\longrightarrow\!\!\!\bullet$
`"o==0"` $=$	$\circ\!\!\!\Longrightarrow\!\!\!\bigcirc$
`"||->>"` $=$	$\Vdash\!\!\!\longrightarrow\!\!\!\twoheadrightarrow$
`"<|-|>"` $=$	$\blacktriangleleft\!\!\!\longrightarrow\!\!\!\blacktriangleright$
`"|>-<|"` $=$	$\blacktriangleright\!\!\!\longrightarrow\!\!\!\blacktriangleleft$
`"-|-"` $=$	$\longrightarrow\!\!\!+\!\!\!\longleftarrow$
`"hook-/->"` $=$	$\hookrightarrow\!\!\!/\!\!\!\longrightarrow$
`"<{-}>"` $=$	$\longleftrightarrow$

Bending arrows
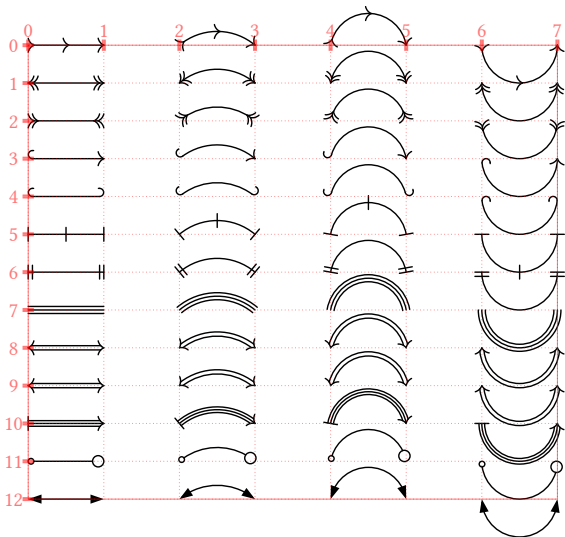
Fine mark angle corrections
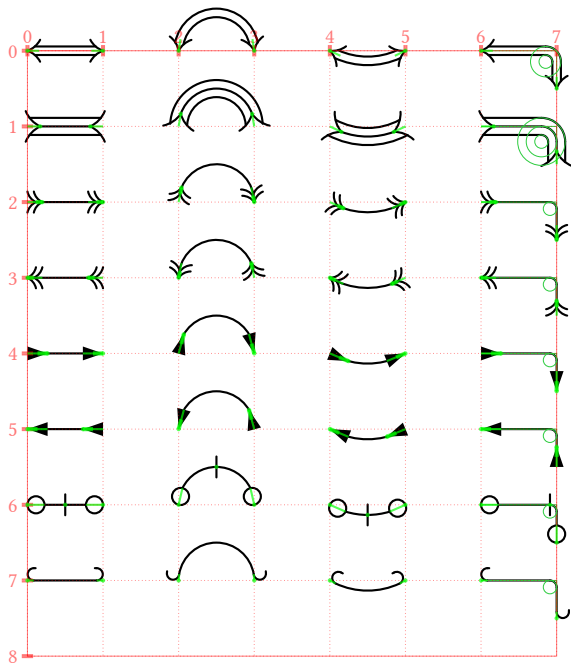
Defocus adjustment

Label side
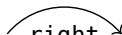
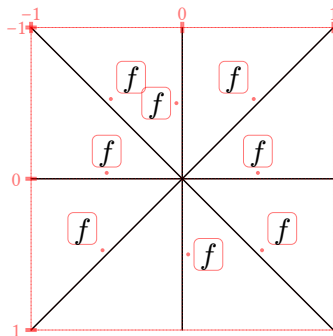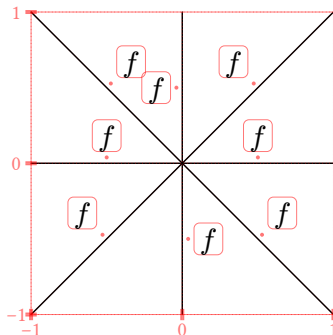|		
left	`center`	right
left	– center →	right
left	center	right
left	left	left
center	center	center
right	right	right

Automatic label placement

Default placement above the line.

Reversed y-axis:

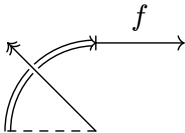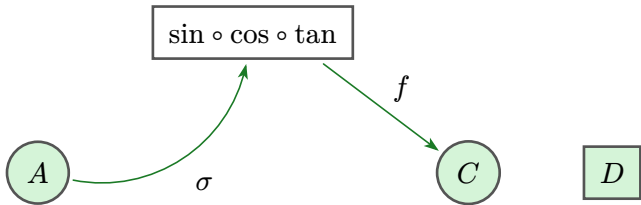# Crossing connectors

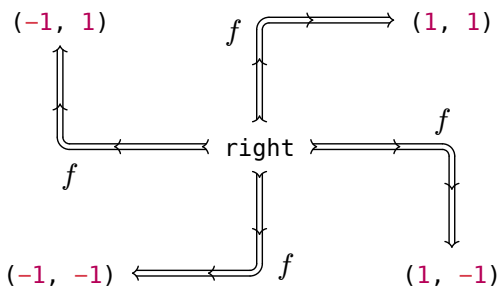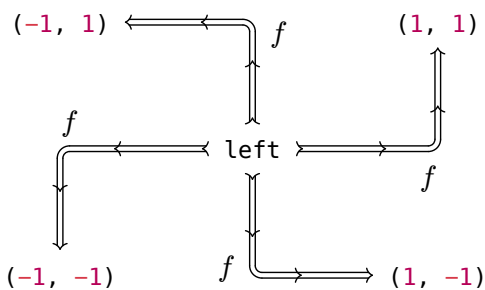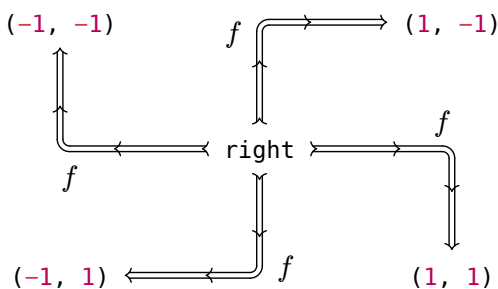# **edge() argument shorthands**

Diagram-level options

CeTZ integration

Bézier

A

Corner edges

(−1, −1)   *f*   (1, −1)

f   left   *f*

(−1, 1)   *f*   (1, 1)

(−1, −1)   *f*   (1, −1)

f   right   *f*

(−1, 1)   *f*   (1, 1)

(−1, 1)   *f*   (1, 1)

f   left   *f*

(−1, −1)   *f*   (1, −1)

(−1, 1)   *f*   (1, 1)

f   right   *f*

(−1, −1)   *f*   (1, −1)
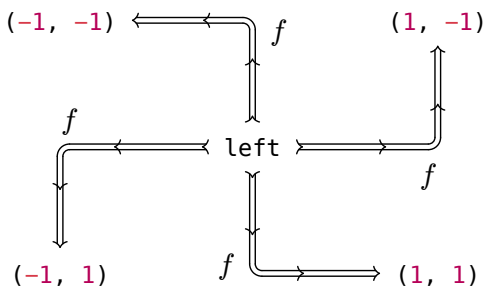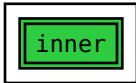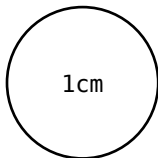
Double node strokes
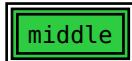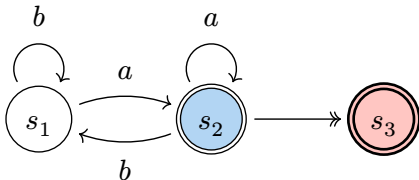
Relative and absolute extrusion lengths

Custom node sizes

Make sure provided dimensions are exact, not affected by node `inset`.
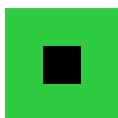
1cm

1cm

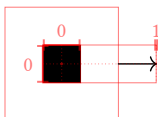width height both

Node inset and outset
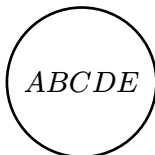
What 5mm inset should look like:

A diagram node with 5mm inset:

A diagram node with 5mm outset:

Circular insets:
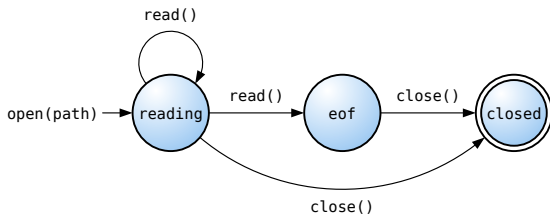
Example

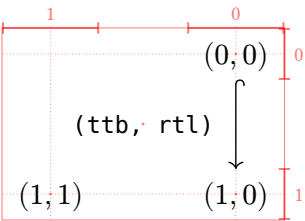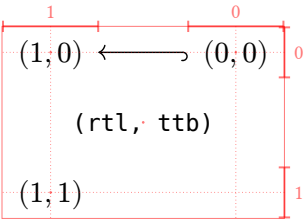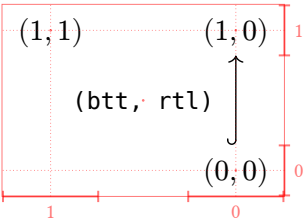Make sure node or edge labels don't pick up equation numbers!

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

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

Axes configuration

(ltr, btt)

(btt, ltr)

(ltr, ttb)

(ttb, ltr)

(rtl, btt)

(btt, rtl)

(rtl, ttb)

(ttb, rtl)
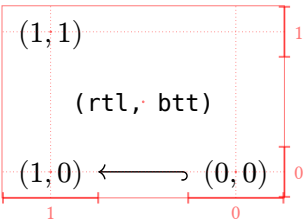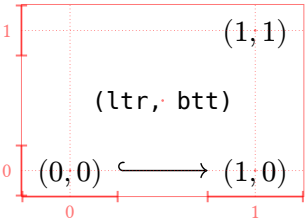
Implicit `from` and `to` points

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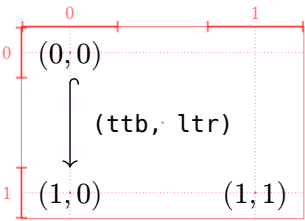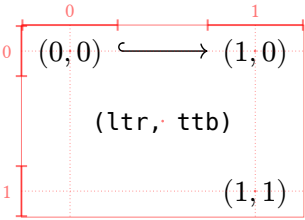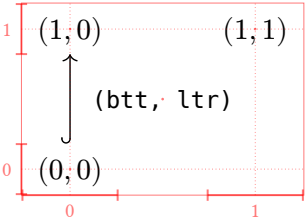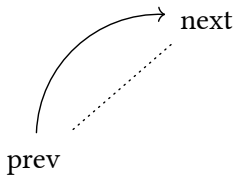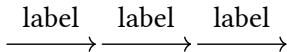
next

prev

Edge positional arguments

Explicit named arguments versus implicit positional arguments.

Each row should be the same thing repeated.

$$A \longrightarrow B \quad A \longrightarrow B \quad A \longrightarrow B$$

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

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

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

Symbol arrow aliases

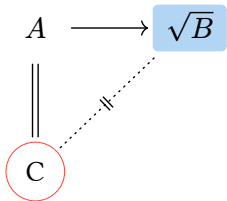| Math	Unicode	Mark	Diagram
$\rightarrow$	$\rightarrow$	`->`	⟶
$\longrightarrow$	？	`->`	⟶
$\leftarrow$	$\leftarrow$	`<-`	⟵
$\leftrightarrow$	$\leftrightarrow$	`<->`	⟷
$\longleftrightarrow$	？	`<->`	⟷
$\twoheadrightarrow$	？	`->>`	↠
$\twoheadleftarrow$	？	`<<-`	↞
$\rightarrowtail$	？	`>->`	↣
$\leftarrowtail$	？	`<-<`	↢
$\Rightarrow$	$\Rightarrow$	`=>`	⟹
$\Longrightarrow$	？	`=>`	⟹
$\Longleftarrow$	？	`<=`	⟸
$\Leftrightarrow$	$\Leftrightarrow$	`<=>`	⟺
$\Longleftrightarrow$	？	`<=>`	⟺
$\mapsto$	$\mapsto$	`|->`	⟼
$\Mapsto$	？	`|=>`	⟾
$\rightsquigarrow$	？	none!	none!
$\leftsquigarrow$	？	none!	none!
$\hookrightarrow$		`hook->`	↪
$\hookleftarrow$		`<-hook'`	↩

Math-mode diagrams

The following diagrams should be identical:

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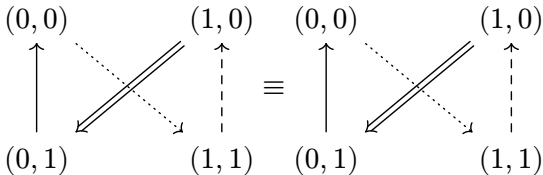G/\ker(f) & &
\end{array}
$$

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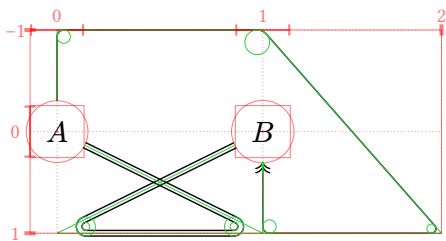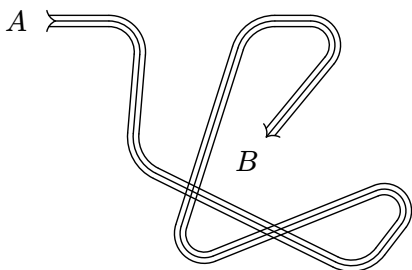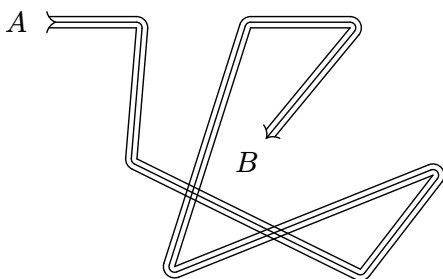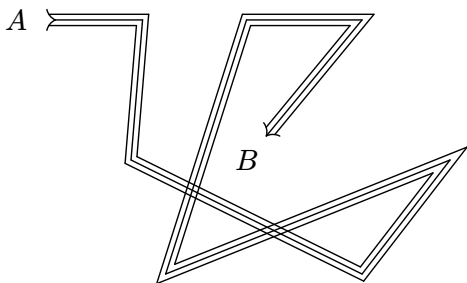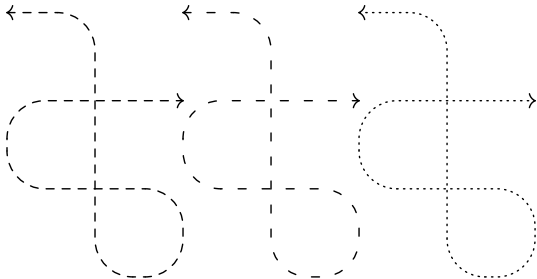G/\ker(f) & &
\end{array}
$$

Nodes in math-mode

$$A \longrightarrow \sqrt{B}$$

$$\parallel$$

$$C$$

Relative node coordinates

$$G \xrightarrow{\ f\ } \mathrm{im}(f)$$

$$\pi \downarrow \qquad \tilde{f}$$

$$G/\ker(f)$$

$(0,0) \qquad (1,0) \qquad (0,0) \qquad (1,0)$

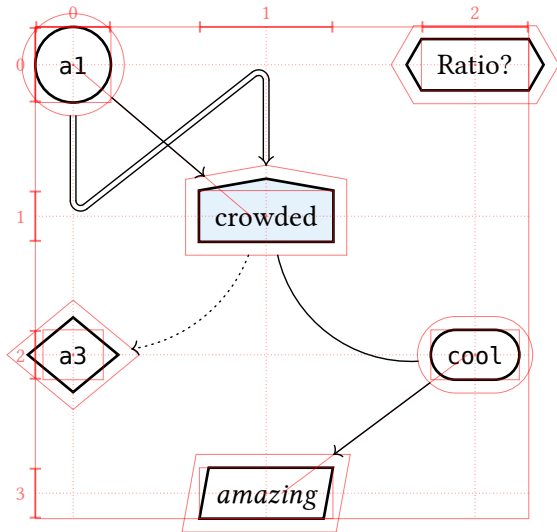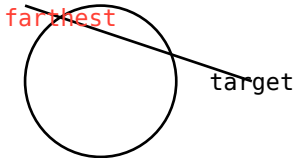$\equiv$

$(0,1) \qquad (1,1) \qquad (0,1) \qquad (1,1)$

Edge paths

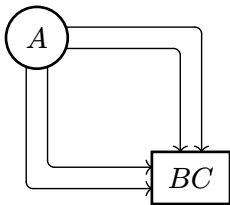# Dashed edge paths

Custom node shapes

Intersection finding

farthest

target

Off-center edges

A

B

a wide node

C

Edge shift

$A \longleftrightarrow B$

$A \quad B$

Label fill

hi

hi

hi

hi

hi

hi

hi