

Agda/Emacs cheat sheet

Agda-mode shortcuts (C-* means Ctrl-*, M-* means Alt-*)

- C-c C-l type check everything (**load**) (valid question marks become holes)
- C-c C-d enter an expression which gets type checked – in a hole, the content of the hole gets checked or, if there is none, you may enter an expression which is allowed to make use of the context of the hole
- C-c C-r while in a hole: try to fill the hole to some extent (**refine**)
- C-c C-t show **t**ype of hole
- C-c C-a let agda try to fill a hole (**auto**)
- C-c C-c enter a variable in a hole and hit C-c C-c to create **c**ases for this variable
- C-c C-f next hole (**f**orward)
- C-c C-b previous hole (**b**ackward)

Some useful emacs shortcuts

- M-x you may enter „help“ to get help for emacs, or „describe-mode“ (while in agda-mode) to get information about the agda-mode
- C-_ undo (do something else and then undo to redo)
- M-< move to beginning of file (and place mark)
- M-> move to end of file (and place mark)
- C-k cut line (**k**ill)
- C-e move to **e**nd of line
- C-a move to beginning of line (**a**nfang?)
- C-x C-s save the file you see
- C-x C-f open some file
- C-s search
- M-/ cycle completions, emacs just searches the file you are seeing for possible completions
- C-x (start keyboard macro
- C-x) end keyboard macro
- C-x e execute keyboard macro – press e immediatly afterwards to repeat

Copy, cut and paste

Hold Shift and move around to mark text.

OR

Hit C-Space to place a mark and move the cursor.

THEN

Press C-w to cut or M-w to copy. Now, press C-y to paste. If you want to cycle through previously copied things – press M-y after pasting.

Math	Agda
$A \times B \rightarrow C$	$A \rightarrow (B \rightarrow C)$
$f(x)$	$f\ x$
$x \mapsto f(x)$	$f(x)$ (sometimes) $\lambda\ x \rightarrow f\ x$
Let $f: A \rightarrow B$ be defined by:	$f: A \rightarrow B$
$f(x) = \begin{cases} x = c_1(y) & g(y) \\ x = c_2(z) & h(z) \end{cases}$	$f\ (c_1\ y) = g\ y$ $f\ (c_2\ z) = h\ z$
HoTT	Agda
Let A be an Inductive Type with constructors $c_1: B \rightarrow A$ and $c_2: A \rightarrow A$.	data A : Set where (if c_1 and c_2 are constructors) $c_1: B \rightarrow A$ $c_2: A \rightarrow A$