

L^AT_EX class 3

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1 More math mode

Remember from last time that you can enter math in-line using single dollar signs, like $a^2 + b^2 + c^{d^{e^{f^2}}}$ and on its own line using double dollar signs, like

$$xyz + abc = lmn$$

Often you want to have aligned equations, especially when doing long calculations. This is done using the ‘align*’ environment.

For example,

$(n + 1)! - n! = (n + 1) \cdot n! - n!$	by definition of factorial
$= n \cdot n! + n! - n!$	expanding
$= n \cdot n!$	cancelling

The ‘align*’ environment is in math mode by default, but you can use the ‘text’ command to enter text mode from within math mode.

2 Lists

Everyone loves lists! Lists are great for partitioning proofs into steps, or for listing cases, or for splitting base cases from induction hypotheses.

There are two types of list: bulleted and enumerated.

Bulleted lists are input using the ‘itemize’ environment:

- apple
- persimmon
- cauliflower
- carrot

- potato

If you want to have a list inside a list, just use another ‘itemize’ environment:

- Fruits:
 - apple
 - persimmon
- Vegetables:
 - cauliflower
 - carrot
 - potato

Enumerated lists use the ‘enumerate’ environment. By default, enumeration looks like this:

1. apple
2. persimmon
3. cauliflower
4. carrot
5. potato

You can change the enumeration style using an argument in [square brackets] directly at the front:

- (a) apple
- (b) persimmon
- (c) cauliflower
- (d) carrot
- (e) potato

Other useful formats include (1) and (i), but you can do some silly ones too:

alabama apple

blbbmb persimmon

clbcmc cauliflower

dlbdmd carrot

elebeme potato

Clive apple

Cliive persimmon

Cliiive cauliflower

Clivve carrot

Clvve potato