

# Mid-term oral examination

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Main difficulties

You can also find more quick tips and tricks on the help pages at [www.overleaf.com/help](http://www.overleaf.com/help)

# The Main difficulties

We focus on two L<sup>A</sup>T<sub>E</sub>X chemistry packages:

## The chemfig package

This package provides the command which draws molecules. Created by Christian Tellechea, a detailed user guide can be found here:

[www.tex.ac.uk/ctan/macros/generic/chemfig/chemfig\\_doc\\_en.pdf](http://www.tex.ac.uk/ctan/macros/generic/chemfig/chemfig_doc_en.pdf)

## The mhchem package

The mhchem package provides simple commands for typesetting chemical molecular formulae and equations. Created by Martin Hensel, a detailed user guide can be found here:

<http://mirror.ox.ac.uk/sites/ctan.org/macros/latex/contrib/mhchem/mhchem.pdf>

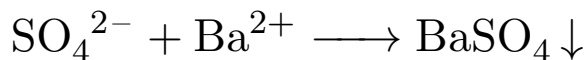
# Chemical equations with mhchem

The `mhchem` package lets you write chemical equations in L<sup>A</sup>T<sub>E</sub>X with the minimum of effort.

The example below shows how the standard representation of a reaction (on the left) is created from the simple code on the right:

$\text{CO}_2 + \text{C} \longrightarrow 2\text{CO}$  is created with `\ce{C02 + C -> 2C0}`

More complicated reactions are still easy to write:

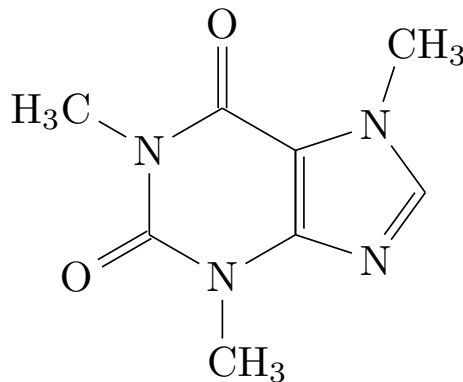


is created with

`\ce{S04^2- + Ba^2+ -> BaS04 v}`

# Getting started with some chemfig coffee

It's easy to use the `chemfig` package for drawing complex molecules:



This is the caffeine molecule, represented clearly and neatly, and built from a single line of text:

```
\chemfig{*6((=O)-N(-CH_3)-*5(-N=-N(-CH_3)-=)--(=O)-N(-H_3C)-)}
```

If that looks quite daunting, we can learn from simpler molecules... how about a single water molecule?

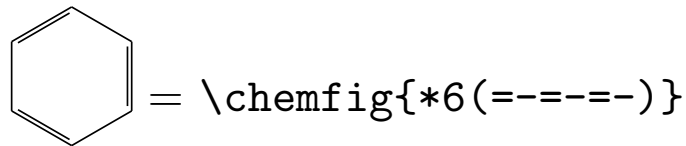
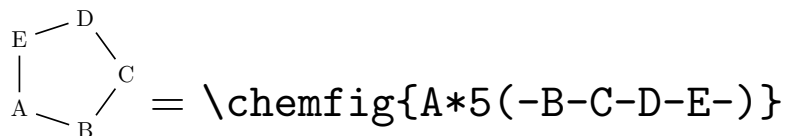
# Experiments with water and rings

To see how the `chemfig` package creates the drawings from your code, let us look at the simple water molecule:

H<sub>2</sub>O is created with `\chemfig{H_2O}`

The simple L<sup>A</sup>T<sub>E</sub>X code on the right is automatically converted into the molecular formula for water on the left.

Rings are similarly easy to code - consider the examples below:



# Where to go next...

This short example was designed to introduce you to using Overleaf for scientific presentations.

This is made possible by the many great packages that have been developed for L<sup>A</sup>T<sub>E</sub>X, including the two we focused on here (plus the Beamer package used for the overall presentation style).

For more help on using L<sup>A</sup>T<sub>E</sub>X, see the links on the Overleaf help page: [www.overleaf.com/help](http://www.overleaf.com/help) or check out our free introductory course: [www.overleaf.com/blog/7](http://www.overleaf.com/blog/7).

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Happy L<sup>A</sup>T<sub>E</sub>Xing!