

4 SageTeX

4.1 SageTeX and latexmk

latexmk is a versatile utility for building \LaTeX documents. It automatically learns about the inter-dependencies of all documents and generated intermediate files. It uses this information to run and repeatedly re-run various tools to produce a working final document.

To make it work well with SageTeX, the file `latexmkrc` in the current directory defines additional dependencies and instructions.

For more information, type a terminal `man latexmk`.

To enable SageTeX in combination with latexmk, this page explains how to modify the `latexmkrc` file:

<https://github.com/dandrake/sagetex/wiki>

Little caveat: to make it work in this demo, a small wrapper script “`run-sagetex.py`” handles the filename and calling in order to work with SageTeX correctly.

4.2 SageTeX Demo

$1 + 1 = 2$

$(x + 1)^5 \rightarrow x^5 + 5x^4 + 10x^3 + 10x^2 + 5x + 1$

Raw Strings:

`['a', 1], ['a', 2], ['a', 3], ['b', 1], ['b', 2], ['b', 3]`

Defining a function g:

```
a = 2  
b = 3  
x = var('x')  
g = a * sin(b * x) + sqrt(x)
```

And a plot of $g = \sqrt{x} + 2 \sin(3x)$ from $[0, 10]$:

