This is a demo of SageTeX

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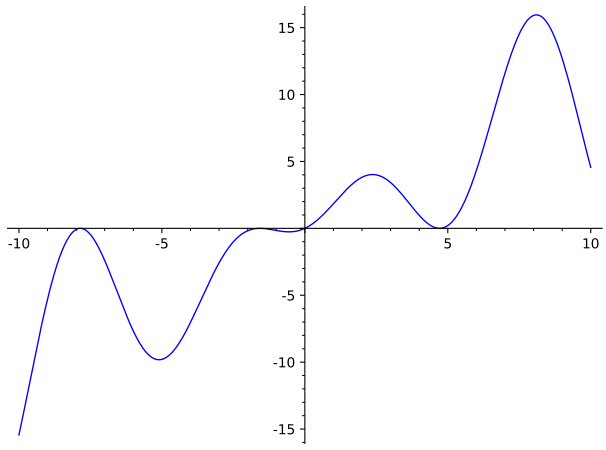
To learn more about LaTeX: `https://en.wikibooks.org/wiki/LaTeX`
For SageTeX, please check out the project: `https://github.com/dandrake/sagetex`

1 Test

Testing $\frac{1}{178} = 0.00561797752808989$.

2 Plotting

is always fun ...



3 This is a test

Testing $(1-x^2)^3 = x^4 - 2\,x^2 + 1$.

Using SageTeX, one can use Sage to compute things and put them into your LaTeX document. For example, there are 54307529612601904503507305556192852O integer partitions of 1269. You don't need to compute the number yourself, or even cut and paste it from somewhere.

Here's some Sage code:

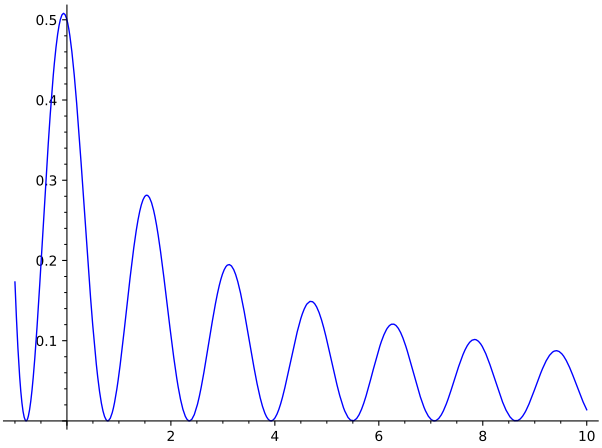
```
f(x) = cos(2*x)^2 / (2+x)
```

The first derivative of f is $x \mapsto -\frac{4\,\cos(2\,x)\,\sin(2\,x)}{x+2} - \frac{\cos(2\,x)^2}{(x+2)^2}$.

The second derivative of f is

$$\frac{\mathrm{d}^2}{\mathrm{d}x^2}\frac{\cos\left(2\,x\right)^2}{x+2}=-\frac{8\,\cos\left(2\,x\right)^2}{x+2}+\frac{8\,\sin\left(2\,x\right)^2}{x+2}+\frac{8\,\cos\left(2\,x\right)\sin\left(2\,x\right)}{\left(x+2\right)^2}+\frac{2\,\cos\left(2\,x\right)^2}{\left(x+2\right)^3}.$$

Here's a plot of f from -1 to 10:



4 AMS Math

$$P\left(A=2\middle|\frac{A^2}{B}>4\right)$$

Matrix:

$$A_{m,n}=\begin{pmatrix}a_{1,1}&a_{1,2}&\cdots&a_{1,n}\\a_{2,1}&a_{2,2}&\cdots&a_{2,n}\\\vdots&\vdots&\ddots&\vdots\\a_{m,1}&a_{m,2}&\cdots&a_{m,n}\end{pmatrix}$$

More here: `https://en.wikibooks.org/wiki/LaTeX/Mathematics`.

5 Pure Text

Usually, `\sage{}` assumes that the value presented is a mathematical formula and wraps it into $. Alternatively, one can display a Python-string via `\sagestr{}`.

1+1 = 2.