1

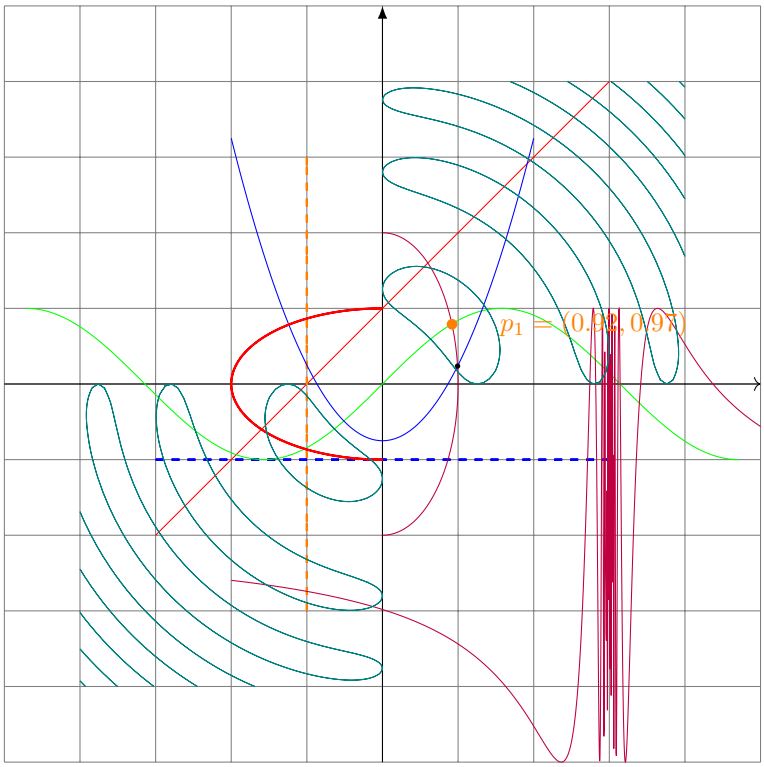
ztikz

1.1 2D Plot Example

There are some examples about using `ztikz` to draw. The operations `'plus'`, `'minus'`, `'multiply'`, `'divide'` are supported, using like `'x+y'`, `'x-y'`, `'x*y'`, `'x/y'` is also OK. But for `'power'` please use the form `'x**y'`.

Also, the ztikz support most functions you need, like $\sin, \cos, \cdots$,

Indeed, the support operators and functions are 100% compatible with gnuplot,to say, ztikz is base on gnuplot.



you can also plot the data generated by other program, like Mathematica,

Remark 1.1.1 If you only draw half of the ellipse, then you can only draw only 1 intersections, if you change your parameter from $[0, \pi]$ to $[0, 2\pi]$, then 2 intersections are support.

Then, there are some examples about using `ztikz` to draw with external

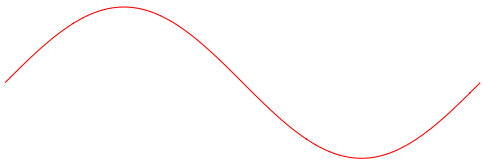


Figure 1.1: Plot MMA data

python, in the next section[1].

1.2 Python matplotlib Example

There is a matplotlib figure as explaination for you. All the following Examples are from matplotlib official site.

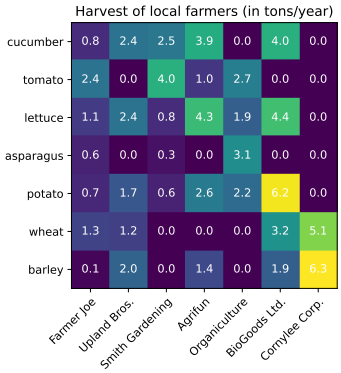


Figure 1.2: Matplotlib Example

Then i will show you a complex graph using matplotlib, which from matplotlib official gallery.

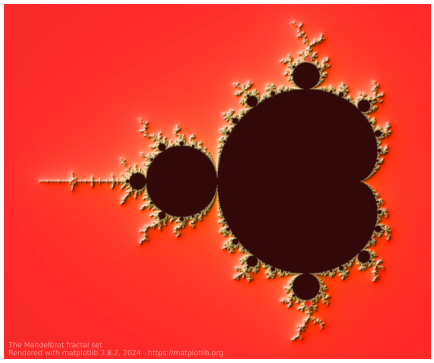


Figure 1.3: Mandelbrot Set

[1]Thanks to the `\write18` function of TEX

Remark 1.2.1 If your Python interpreter is not configured correctly, thus making your compiling takes too long, consider to use `matplotlib.use('Agg')`.

Additionally, please remove the code about **show** or **save** figure, ztikz will automatically add a save-figure command in the end. But if your source code have some snippets like `if __name__ == "__main__"` and so on, which makes your last code about saving figure need a indent, then consider format the source code to prevent the indent.

Why i make such command ? can we make the picture first in python first, then introduce this picture in the LaTeX document ? yes, of course you can. but, i want "**all in one**".

In my opnion, even this function is hard to make, but i'd like to give a try [2], then i just need to input this package and use it.

1.3 sympy Example

Finally, i will show your a addtionally function provided by `ztikz`, which is called `\sympy`, it will calculate using the python package `sympy`. By the way, similarly to the matplotlib function before, the `\sympy` allows to have the cache mechanism, which means that you won't recompile the same code the second time you compile your document.

There is a example.

$$\int x^8 + \cos(7x) + 6t \,\mathrm{d}x = 6tx + \frac{x^9}{9} + \frac{\sin(7x)}{7}$$

[2] the truth is that i have taken too much time on writing this package