

Sage Tutorials

Getting started with Sage

Today: We use SageMathCell for some basic introduction.

No installation, direct quick start as follows:

Go to: <https://sagecell.sagemath.org/>

Put code
here →

Press
evaluate

Result is
displayed here →

The screenshot shows the SageMathCell web interface. At the top right, there is a link for "About SageMathCell". The main header features the SageMath logo (a white geometric shape on a blue background) and the text "SageMathCell". Below the header, a prompt says "Type some Sage code below and press Evaluate." The central part of the interface is a large text input area for code, with a small icon in the top right corner. Below the code area is a grey "Evaluate" button. To the right of the button is a language selection dropdown menu currently set to "Sage". Further right is a "Share" button. At the bottom of the interface is a wide, empty rectangular box intended for the output of the code execution. In the bottom right corner, there is a footer that reads "Help | Powered by SageMath".

Let's try it.



Type some Sage code below and press Evaluate.

```
1 5+7
```


Evaluate

Language: Sage

Share

12

Here's another example:



Type some Sage code below and press Evaluate.

```
1 f(x)=cos(x)
2 f.integrate(x)
```

Evaluate

Language: Sage

Share

```
x |--> sin(x)
```

[Help](#) | Powered by [SageMath](#)

One more:



Type some Sage code below and press Evaluate.

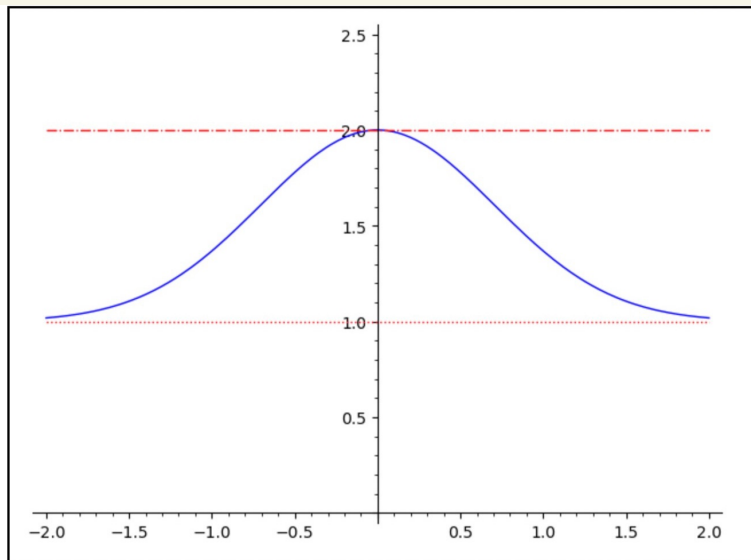
```
1 exponential = plot(1+e^(-x^2), xmin=-2, xmax=2, ymin=0, ymax=2.5)
2 max_line = plot(2, xmin=-2, xmax=2, linestyle='-.', color = 'red')
3 min_line = plot(1, xmin=-2, xmax=2, linestyle=':', color = 'red')
4 exponential + max_line + min_line
```



Evaluate

Language: Sage

results in a
beautiful plot



Let's get started with basic computations and some plotting:

Go to: <https://doc.sagemath.org/html/en/index.html> and explore.

SAGE
Sage 10.3 Documentation

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Documentation

This is documentation for Sage 10.3. Documentations in other languages are available [here](#).

Tutorials and FAQ

- [A Tour of Sage](#)
A one page introduction to Sage as a handy calculator.
- [PREP Tutorials](#)
This set of tutorials takes the reader from very minimal computer background to a good understanding of basic undergraduate Sage functionality. It includes several thematic "Quickstart" tutorials, and was originally developed as professional development material for the MAA.
- [Tutorial](#)
The best way to become familiar with Sage in only a few hours.
- [Constructions](#)
This document collects answers to some questions along the line "How do I construct ... in Sage?" Try to find out how to see the Riemann zeta function $\zeta(s)$ along the line $s = \frac{1}{2} + it$.

e.g.
Select



Sage 10.3 Documentation

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PREP Tutorials

This is a set of tutorials developed for the MAA PREP workshops "Sage: Using Open-Source Mathematics Software with Undergraduates" (funding provided by the National Science Foundation under grant DUE 0817071) in the summers of 2010-2012. It is licensed under the Creative Commons Attribution-ShareAlike 3.0 license ([CC BY-SA](#)).

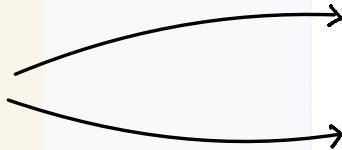
The original audience for these tutorials was mathematics faculty at undergraduate institutions with little or no experience with programming or computer mathematics software. Because the computer experience required is quite minimal, this should be useful to anyone coming with little such experience to Sage.

Although any mathematics the reader is not familiar with can simply be skipped at first, we do assume throughout that the reader is familiar with the concept of a function and different kinds of numbers. We also make liberal use of basic examples from calculus, linear algebra, and other areas. In the [Quickstart tutorials](#), we assume familiarity with the topics at the level of a student who has just completed a course in the subject, or of a faculty member who is about to teach it.

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Then try



Ask questions, when you get stuck!