

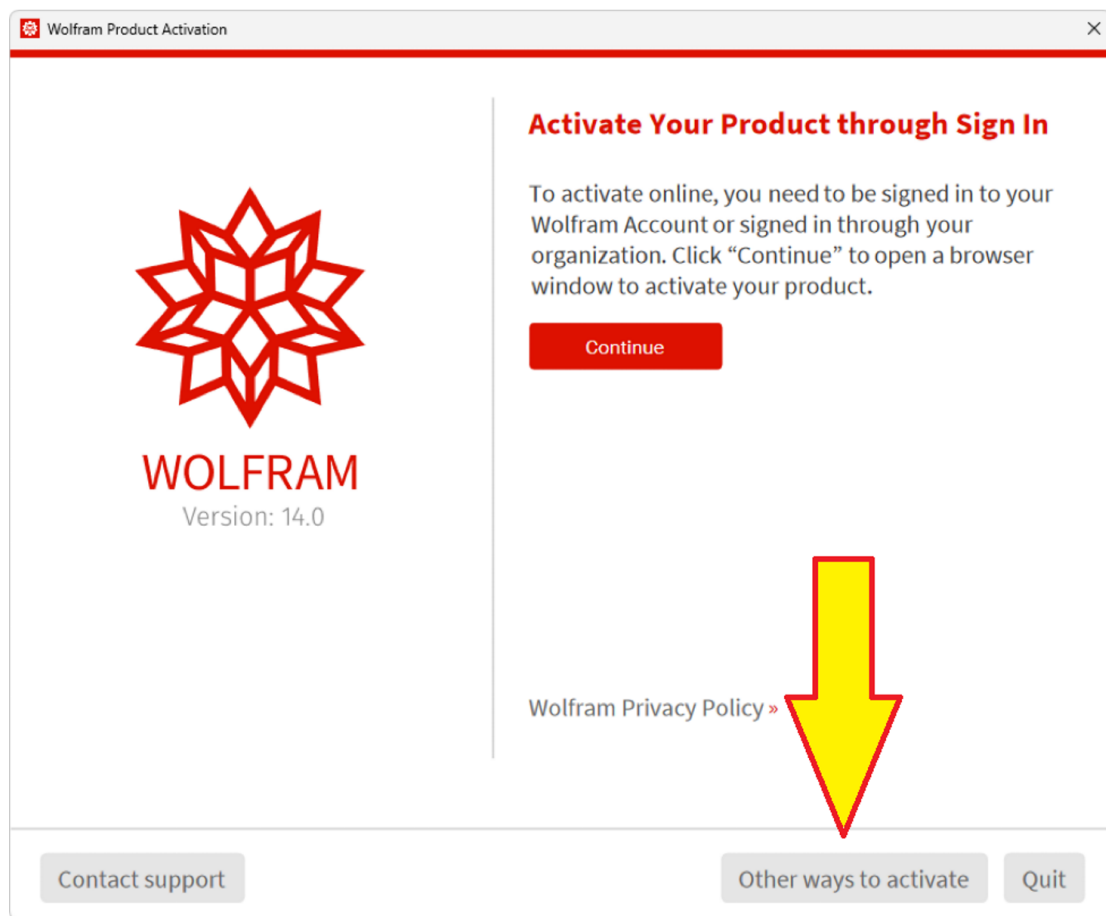
FAQ : Using Mathematica

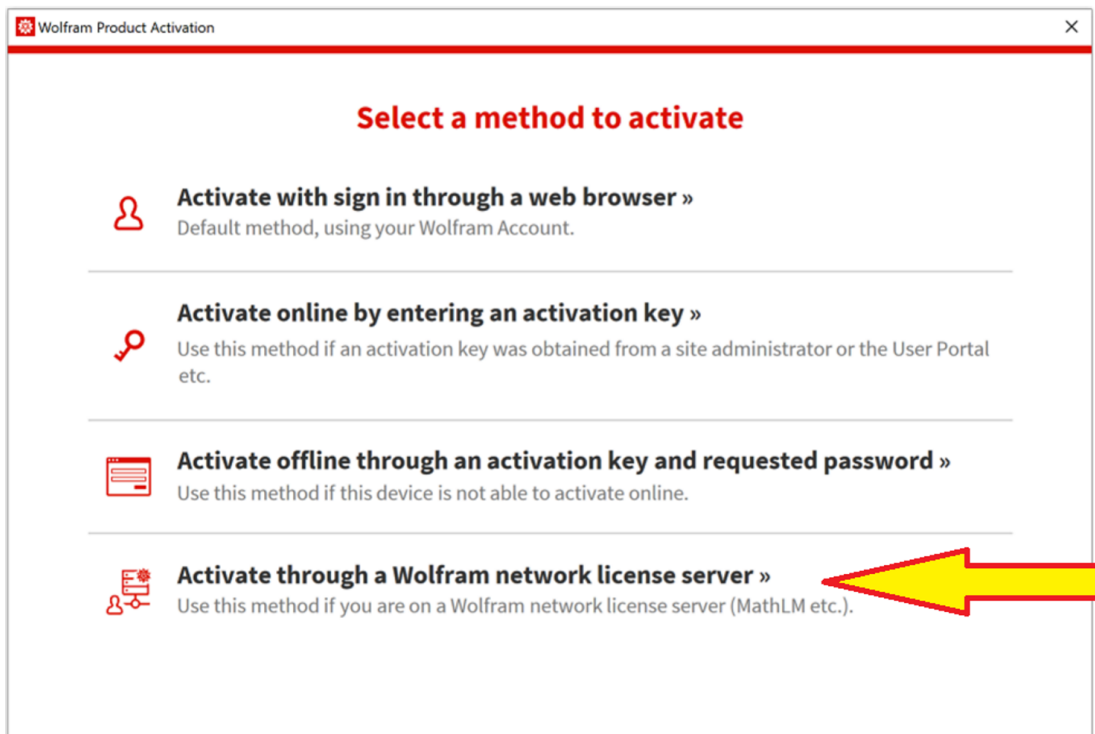
Introduction

1. Download the appropriate installation file here: <http://go.southern.edu/mathematica>

During installation or the first time you run Mathematica, select:

- Other ways to activate
- Activate through a Wolfram network license server





Then input: Server name **mathematica.southern.edu**

Note: Our license allows Mathematica to be installed on any computer owned by Southern or by any student, faculty/staff member. Once you have input our license server address the first time, you should be able to just hit <Enter> to (occasionally) reconnect. Usually reconnection is automatic. Please let me know if you have any difficulties. In fact, let me know if you are successful, too. <grin!>

2. (Alternative method) If you don't have enough disk space for Mathematica, you may use a Wolfram Cloud account to run Mathematica in the Cloud from a memory-poor or storage-space-poor device:

- Go to <https://www.wolframcloud.com/>, and/or or get the app: <https://www.wolfram.com/cloud-app/>
- Log in with your southern.edu email address.
- At least ONE TIME, go to <https://user.wolfram.com/>, log in using your southern.edu email address, and complete the registration form, indicating student status and expected graduation date. Submit the form.
- When you go back to Wolfram Cloud, after perhaps a short delay, you should see that "Plan: BASIC" in the middle of the top menu bar has changed to "Plan: Southern Adventist University". This allows you to drag and drop files from your computer to/from your Wolfram Cloud folders.

Note that this will be much slower than having a local installation. We only have 25 licenses, so students using iPads in classes where Mathematica is used will have priority.

3. Here is a series of tutorials gives the basics of using many different features of Mathematica:

<https://www.wolfram.com/broadcast/screencasts/handsonstart/>

4. A few ideas for getting started:

After "=", type in English what you want to do. Learn from Mathematica how to use Mathematica!

Use <Shift>-<Enter> to execute commands.

Click any word and hit <F1> to get specific help on that topic, format of commands, live examples.

Common tasks: graphing (Plot, Plot3D, ContourPlot), solving equations & systems of equations (Solve), taking the derivative or integral (D, Integrate).

```
In[5]:= Grid[{
  {"Ex/", "Plot[x * Cos[x], {x, -38, 38}]",},
  {"", "Plot3D[x * y * Cos[x] * Cos[y], {x, -10, 10}, {y, -10, 10}]",},
  {"", "Solve[{2x + 3y == 5, x^2 - y^2 == 8}]",},
  {"", "Solve[ax^2 + bx + c == 0, x]",},
  {"", "D[xE^x^2, x]",},
  {"", "Integrate[%, x]"}],
  Alignment -> Left, Frame -> All,
  Spacings -> {1, 1}, BaseStyle -> {Medium, FontFamily -> "Times"}]
```

Ex/	Plot[x * Cos[x], {x, -38, 38}]
	Plot3D[x * y * Cos[x] * Cos[y], {x, -10, 10}, {y, -10, 10}]
	Solve[{2x + 3y == 5, x^2 - y^2 == 8}]
	Solve[ax^2 + bx + c == 0, x]
	D[xE^x^2, x]
	Integrate[%, x]

Two common SSS-related commands (needs the latest SSS program loaded):

1. SSS[ruleset, initial state, number of steps, options]. Ex/ SSS[{"AA" -> "B", "BA" -> "AB", "" -> "A"}, "AAAAA", 50]

(a couple of common options: NetSize -> 200, HighlightMethod -> Dot)

2. fromGeneralizedRank[n] (gives the n-th SSS ruleset)

Ex/ The first ruleset in the enumeration:

```
In[152]:= fromGeneralizedRank[1]
```

```
Out[152]= {" " -> "A"}
```

Ex/ The first 1000 rulesets:

```
fromGeneralizedRank/@Range[1, 1000]
```