

Mathematica Downloading instructions.

Mathematica is a very cool mathematical software package that's been around for the better part of a couple of decades. It can calculate things amazingly quickly as we saw in class with the De Mere dice problem simulations (it can also make excellent plots of functions, and much much more). Here's the nice part - as Harvard Extension School students you are all eligible to get a free copy of the Mathematica package - it won't last forever on your machine as Mathematica requires new passwords each year.

First, please go to <http://www.wolfram.com/broadcast/#Tutorials-GS> to run through a demonstration of Mathematica in action (click on the "Hands-on Start to Mathematica" Parts 1 and 2) This is a short guide to give you just a bit of a feel for this software. After you've done that you might want to browse through some of the Mathematica demonstrations available at <http://demonstrations.wolfram.com/>

Next, let's get set for the installation itself. Bear with me, as this will get pretty involved!! First, if you already have a working version of Mathematica on your computer, then don't bother going through with all of the following. On the other hand if you do have a copy of Mathematica already and you want to upgrade your Mathematica program, then you might need to uninstall the older copy first.

To download the software and get a password you'll need to have a Harvard ID number (you should have gotten this when you registered for the course), as well as a Harvard PIN and a Harvard email address. Even though you've all gotten a Harvard ID number, you might not have ever signed up for the email address or PIN. So...

(0) (Step Zero!) To get a Harvard PIN and activate your Harvard email address you'll need to go to <http://www.fas-it.fas.harvard.edu/newToFas/students> . At the top of the page it tells you how to get a PIN. After you've taken care of that, go back to the same <http://www.fas-it.fas.harvard.edu/newToFas/students> page and in the middle of the page is another link labeled "Create your email account"

Once you've got a Harvard email and Harvard PIN you're ready for the actual software installation!

(1) Now go to <http://www.fas-it.fas.harvard.edu> and click the link at the top to Software Downloads.

(2) You'll then be asked to enter your Harvard ID number and PIN to proceed.

(3) Scroll down to Mathematica and click on the name to start downloading the software..

(4) You'll probably be prompted as to whether to run or save the software. Save the software Mathematica.exe in a location on your computer so that you can find it in as soon as it's finished downloading.

(5) Now find the Mathematica.exe file and run it to start the actual software installation on your computer. Again note that if for some reason you already have Mathematica on your computer you're supposed to uninstall the older version first.

(6) Start up the Mathematica program - it will stop immediately and ask you for an Activation Key (XXXX-XXXX-XXXXXX). To get this go back to the Software Downloads page by going through <http://www.fas-it.fas.harvard.edu> again (you might have to re-enter your ID and PIN given that it times out after a certain amount of time has elapsed) - and click on "Students may request an Activation key here"

(7) Click on "Continue without signing in" when the Wolfram website comes up taking you to a "Wolfram Activation Key Request Form - Harvard University" webpage

(8) Type in your information on the form - important - using your new Harvard email address (that's the only one that the Activation Key can be sent to) on the form.- Department can just be "DCE" for Division of Continuing Education, Machine name can just be "home computer" or something like that.. Under 2. Select a product just leave it as "Mathematica for Sites 9.0.1 (Single Machine)"

(9) Now, a bit of waiting (but maybe not too long) - an email from Wolfram should be sent to your new Harvard email address (sigh - trying to find it - i.e. using your new email account might take a bit of effort, good luck!) - with the Activation Key enclosed. With any luck you just need to cut and paste that new Key into the Activation Key request window that you should still have open with your copy of Mathematica and then... presto! it should now complete the start up of your copy of Mathematica - hopefully!

Whew!!!!

To see if you've actually got it running, try running the following commands - type these into Mathematica then after each line hit **Shift+Enter** (on a PC) to make Mathematica execute the command:

First, to check out the unlimited precision capabilities of Mathematica try finding the first 1000 digits of Pi by typing

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N[Pi, 1000]
```

(try testing out some limits in terms of computation speed - up the ante to 10,000 digits by typing N[Pi, 10000] what about 100,000 digits!)

Now see what Mathematica can do with polynomials - try

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Expand[(x + 1)^10]
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and finally, check your answer to question 4 - to multiply two numbers put a space between them and hit **Shift+Enter** (i.e. type "11254361 57762343")

Now, have fun poking around with your new software!