

**LARSON—MATH 255—HOMEWORK WORKSHEET 02**  
**Reading Bard’s Sage Book.**

1. Log in to CoCalc.
  - (a) Start the Chrome browser.
  - (b) Go to `https://cocalc.com`
  - (c) Login (**your VCU email address** is probably your username).
  - (d) You should see an existing Project for our class. Click on that.
  - (e) Click “New”, then “Worksheets”, then call it **h02**.
  - (f) **Annotate your work carefully and completely. The more explanation the better!**

The following readings and related work come from Gregory Bard’s *Sage for Undergraduates* (published by Springer and also on Prof Bard’s web page). Here’s a link: <http://www.people.vcu.edu/~clarson/bard-sage-for-undergraduates-2014.pdf>

2. **Read** Sections 1.5. It’s on matrices.

You may not have had Linear Algebra yet. That’s OK. You’ve seen systems of equations in 2-variables. Linear Algebra is just the generalization to systems of any number of equations and any number of variables (and all the theory that’s been developed in connection with this). Reading and testing the code will still be useful.

As you read, **run all the code** that you see on your worksheet. Annotate appropriately. In particular I should be able to determine what section/subsection of Bard’s book your code snippets came from. Make sure that the code runs—or get help.

**Important Note:** When Prof Bard’s book was written `print` commands like the following worked:

```
print "Hello World!"
```

This (Python-2 style) `print` syntax is no longer supported in Version 9.x of Sage. The (Python-3 style) `print` command requires parentheses:

```
print("Hello World!")
```

3. Change all of Bard’s `print` commands to Python-3 style as you work through this text.

### **Getting your homework recorded**

When you are done writing up your nicely annotated code examples...

- (a) Click the “Make pdf” (Adobe symbol) icon and make a pdf of this worksheet. (If Cocalc hangs, click the printer icon, then “Open”, then print or make a pdf using your browser).
- (b) Send me an email with an informative header like “Math 255—h02 worksheet attached” (so that it will be properly recorded).
- (c) Remember to attach your homework worksheet!