

Last name _____

First name _____

LARSON—MATH 255—CLASSROOM WORKSHEET 02
Getting Started.

1. Create a Cocalc/Sage Cloud account.
 - (a) Start the Chrome browser.
 - (b) Go to `http://cocalc.com`
 - (c) “Create new account” using **your VCU email address** .
 - (d) You should see an existing Project for our class. Click on that.
 - (e) Click “New”, then “Worksheets”, then call it **c02**.
 - (f) For each problem number, label it in the Sage cell where the work is. So for Problem 2, the first line of the cell should be **#Problem 2**.

The multiplication operator in Sage is “*”. The most common error in Sage is forgetting to put in a “*” when multiplying.

2. Find (evaluate, RUN) $623 * 937$.
3. Find 3^{17} by evaluating `3**17`.

You often have to *force* Sage to give you a decimal approximation of what you’ve calculated.

4. Use `n(_)` to find a decimal approximation for $\sqrt{8}$. (The underscore refers to the last computation).
5. What can you do for other roots besides `sqrt`? (Get Help with the Square Root command `help(sqrt)`). Find $\sqrt[9]{50}$.
6. Find $\sqrt{-4}$.
7. Find i^2 .
8. Evaluate “pi”. Then use `n(_)` to find a decimal approximation for π .

9. Find a decimal approximation for $\sqrt{2}$.
10. Evaluate “e”. Find a 6-digit approximation for e
11. Find a 6-digit approximation for e^3
12. Find $\log 10$
13. Find $\log_{10} 10$.
14. Find $\sin \frac{\pi}{3}$
15. Find $\tan \frac{\pi}{2}$.
16. Find $\arcsin \frac{1}{2}$

Sage doesn't understand degrees—only radians. What can you do here?

17. Find $\sin 47^\circ$, and a decimal approximation.
18. Type in “i” and evaluate.
19. Find i^3 by hand, then check it with Sage.

`plot` is Sage's powerful and flexible command for plotting functions of a single variable.

20. Sketch the graph of x^3 on the interval $(-2, 2)$.
21. Sketch the graph of $|x - 1|$ on a “nice” interval.
22. Sketch $\cos x$.
23. Sketch $\cos t$. What happens? What do you think the difference is?
24. Sketch $\cos x$ on the interval $(-2\pi, 2\pi)$.
25. Sketch x^2 and x^4 on the interval $(-2, 2)$.

Getting your classwork recorded

When you are done, before you leave class...

- (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 - c02 worksheet attached” (so that it will be properly recorded).
- (c) Remember to attach today's classroom worksheet!