

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) You should see an existing Project for our class. Click on that.
- (d) Click “New”, then “Worksheets”, then call it **c02**.

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

2. Find $900(1 + .06(90/365))$.

3. Find 25^2 and 25^{10} .

Sage uses only curved parentheses for grouping. The common square parentheses are reserved in Sage for *lists*.

4. Find $550 \frac{[1 + (1.05)^{-30}]}{0.05}$

Sage returns *exact expressions* (no rounding error) when possible.

5. Find an exact expression for $\sqrt{8}$.

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

6. Use $n(-)$ to find a decimal approximation for $\sqrt{8}$.

What can you do for other roots besides `sqrt`?

7. Find $\sqrt[6]{50}$.

8. Evaluate “pi”. Then use $n(-)$ to find a decimal approximation for π .

9. Evaluate “e”. Find a 6-digit approximation for e

10. Find a 6-digit approximation for e^3

11. Find $\log 10$

12. Find $\log_{10} 10$.

13. Find $\sin \frac{\pi}{3}$

14. Find $\tan \frac{\pi}{2}$.

15. Find $\arcsin \frac{1}{2}$

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

16. Find $\sin 47^\circ$, and a decimal approximation.

17. Type in “i” and evaluate.

18. 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.

19. Sketch the graph of x^3 on the interval $(-2, 2)$.

20. Sketch the graph of $|x - 1|$ on a “nice” interval.

21. Sketch $\cos x$.

22. Sketch $\cos t$. What happens? What do you think the difference is?