

Math 110 (Section 002) Learning Objectives

Students should be able to do the following things by the end of each respective unit. Additions may be made as the term progresses.

Exponentials

1. Explain what a differential equation is.
2. Define the number e and sketch the function e^x (possibly subject to some transformations).
3. Define and sketch the function $\ln x$ (again with transformations).
4. Argue for the “naturalness” of base- e as opposed to base-10 logarithms.
5. Do arithmetic with exponentials (eg. simplify $(2^3)^4 2^2$).
6. Argue for the usefulness of exponential and logarithmic functions in terms of modeling and differential equations.
7. Explain what the derivatives of e^x and $\ln x$ are and justify them without proof.