1 Administrivia

Distribute homework.

Announcements

Assignment

Read 3.10. Online quiz.

Homework due tomorrow.

From Last Time

Exercise problem 9 was an important exercise — curve fitting.

2 Introduction

1. Logarithms are the inverses of exponentials:

\[
\ln(e^x) = x \\
\log(10^x) = x
\]

The bases must match: \(\ln(10^x) \neq x\).
2. Laws of logarithms:

\[
\begin{align*}
\log_b(rs) &= \log_b r + \log_b s \\
\log_b(r/s) &= \log_b r - \log_b s \\
\log_b(r^s) &= s \cdot \log_b r
\end{align*}
\]

3. Note \( \ln = \log_e \) and \( \log = \log_{10} \).

Common log, natural log.

4. We can use logarithms to solve exponential equations:

\[
0.335 = e^{-0.18t}
\]

5. Shape of the logarithmic curve? Domain? Range?

6. Suppose \( f(x) = e^x \). What are the equations and domains of \( f \circ f^{-1} \) and \( f^{-1} \circ f \)?

7. Example problems. Pg. 211: 3.

2.1 Class Exercise

Pg. 212: 5, 8.