Math 197 Overview

Unit 1: Functions(~ 3 weeks)

- Working together/community building
- Function representations: Rule of 4, domain, range.
- Foundational Functions: Linear (mx + b), Exponential (ab^x), Quadratic (x^2, ax^2+c). Others: 1/x, x^3, |x|.
- Comparing Linear and Exponential functions
- Some linear and exponential situations
- Solving equations graphically

Unit 2: Quadratics - Introducing parameters and transformations (~4 weeks)

- Second differences in quadratics
- Parameters: y = ax^2, y = x^2 +c
- Three forms: Vertex, Standard, Factored
- Quadratic formula
- Comparing Quadratic and Exponential functions.
- REvisit exponential: y = ab^x +**c, and change b^x to 10^(rx).**

Unit 3: New Functions from Old (~3 weeks)

- Multiplying and adding linears to get polynomials
- Dividing polynomials to get rational functions
- Transformations
- Compositions
- Seeing transformations as compositions - decomposing with linear functions

Unit 4: Inverses and Common Logs (~4 weeks)

- Log as an inverse operation for exponential - return to solving b = 10^r
- Rules for exponents and power rule for logs (base 10)
- Inverse functions including restricting domains.
- Exponential and log functions (base 2 and base 10 as inverses)
- Graphs of log base 2 and log base 10