

Exam 2 Study Guide

The test is closed book and closed notes, but you may use a calculator. The following lists of bullet points should help narrow down what you study, but is not intended to be exhaustive.

- Covers chapters 3-5 and the small amount of material in chapter 6.
- Be able to derive the quadratic formula via completing the square.
- Be able to compute gcds via Euclid's algorithm, and be able to write the gcd as a \mathbb{Z} linear combination of the two arguments.
- Know the Rational Root Theorem and how to use it along with polynomial long division (or synthetic division) to solve polynomial equations.
- Know how to reduce a polynomial via the substitution $y = x + k$.
- Know Cardano's formula and how to use it.
- Be familiar with the ancient technique of solving systems of quadratic equations (See section on "Systems of Equations" in chapter 3.)
- Be able to determine whether a multi-variable polynomial is symmetric or not.
- Know how the elementary symmetric polynomials are defined.
- Know Viète's theorem and how it relates polynomials in one variable to the elementary symmetric polynomials.
- Read the short bullet-point biographies of famous mathematicians and be able to associate book titles with their authors.
- You will *not* be expected to derive Cardano's formula.
- You will *not* be expected to know Ferrari's method of reducing a quartic equation to a cubic.
- You will *not* be expected to recognize hieroglyphic symbols nor cuneiform symbols, nor Diophantus' symbolic system.
- You will *not* need to memorize any dates, for example birth dates, publication dates, etc..