

Math 1275/D500, Spring 2017: Final Exam Review

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Our final exam will be **Wednesday, May 24** (at the usual class time, 8:00-9:40am).

The questions on the final exam will be very similar in format to the exercises on the Math Department's Final Exam Review sheet (available online at <http://www.citytech.cuny.edu/mathematics/docs/review/MAT1275FinalRview.pdf> or on OpenLab: openlab.citytech.cuny.edu/groups/mat1275-ganguli-spring2017/files/).

Note that many of the exercises on our midterm exams and quizzes were very similar in format to these exercises. The best way to review for the final is to **work through the Final Exam Review sheet**, and **study the related midterm exam solutions and quiz solutions** as you do so.

Below is a guide to the exercises on the Final Exam Review sheet, with similar exam questions, WebWork exercises, and textbook examples listed for further review.

#1: Solving Quadratic Equations (using the quadratic formula)

- Quiz #4 (question #2)
- Quiz #5 (question #3)
- Exam #2 (question #3)
- WebWork: "QuadraticFormula" set

#2: Graphing Quadratic Functions (by completing the square to identify the vertex)

- "Graphing Quadratics" class handout (pdf available on OpenLab)
- Quiz #5 (question #1 & #4)
- Exam #2 (question #5)
- Exam #3 (question #1)

#3: Simplifying Complex Fractions (using least common denominators)

- Quiz #2
- Exam #1 (question #3)
- Exam #2 (question #1)

#4: Graphing Circles (by completing the squares to identify the center and radius)

- Exam #3 (question #2)
- WebWork: "Circles" set, Problems 1-4

#5: Complex Numbers (multiplying via "FOIL"; dividing using the complex conjugate)

- Quiz #3 (question #1)
- Exam #2 (question #2)

#6: Solving a system of 3 linear equations in 3 variables

- Quiz #6
- Exam #4 (question #3)
- Algebra textbook, Sec 3.6: Example 1 (pp280-281)

#7: Solving systems involving nonlinear equations

- Quiz #7
- Exam #4 (question #1)
- Algebra textbook, Sec 9.4: Example 1(b) (p777), Example 4 (p779)

#8: Finding the values of the trig functions based on the value of one trig function (and information about the sign of one other trig function):

- Exam #3 (question #3)
- WebWork: "CoordinatePlaneTrig" set, Problems 4 & 5
- Trigonometry textbook, Sec 1.3: Example #5 (p26)

#9: Using the Law of Sines or Law of Cosines

- Exam #4 (question #2)
- Trig textbook, Sec 7.1: Example 1 (pp317-318)
- Sec 7.2: Examples 2 & 3 (pp331-332)

#10: Verifying Trig Identities—use the fundamental trig identities and algebra

- Exam #4 (question #5)
- Trig textbook, Sec 1.4: Examples 2-4 (pp32-33)
- Trig textbook, Sec 5.1: Examples 1 & 2 (pp212-213)

#11: Solving Trig Equations (using the unit circle)

- Exam #3 (question #5)
- WebWork: "SolvingTrigEquations" set (Problems 1-7)

#12: Solving an exponential equation (using logarithms):

- Examples from class on Mon May 22
- Algebra textbook, Sec 8.7: Example 7 (p722)

#13: Evaluating logarithms (using the definition of logarithms)

- Exam #4 (question #4)
- WebWork: "LogarithmicFunctions" (Problems 6-10)
- Algebra textbook, Sec 8.4: Examples 1 & 2 (pp682-683)