Week 12

Graded Materials:

- **MIDTERM!**
  - **Wednesday, during class.**
- **NOTE: Some due dates are different than other weeks.**
  - The homework consists of s problems this week. The homework is due by the end of Monday 11/23, though try to finish it before then!
  - There are no module exercises due this week, or the next, HOWEVER, it is expected that you work on the Module 16 exercises some during these weeks (the homework serve as guides for what should be accomplished).
- **Saturday (11:59pm)**
  - Homework WEEK 12.
- **Wednesday Class Time: In-class <u>MIDTERM</u>**
  - You will be expected to
    - Given a linear differential equation IVP of any order, be able to determine whether we are guaranteed the existence of a unique solution with the information given.
    - Determine whether given differential equations are
      - linear,
      - linear with constant coefficients, or
      - Cauchy-Euler equations.
    - Solve homogeneous linear differential equations.
    - Solve nonhomogeneous linear differential equations using both
      - the method of undetermined coefficients, and
      - the method of variation of parameters.
    - Solve homogeneous and nonhomogeneous linear differential equations.
      - (Note: be able to use undetermined coefficients and variation of parameters.)
    - Determine whether a set of functions form a fundamental set of solutions for a homogeneous linear differential equation or not.
    - Solve problems similar to those seen in previous quiz topics, homeworks, and module exercises.
    - Be able to answer questions surrounding the forms of general solutions for homogeneous and nonhomogeneous linear differential equations.
    - See the "Expectation Checklist" for Modules 8-15.
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  - Module 16 is NOT on the midterm.

Material to Master:

- Modules 8-15 for the midterm. Then begin on Module 16.