

MATH 342 SECTION 33650
WRITTEN HOMEWORK 5
DUE MAY 7, 2018.
INSTRUCTOR: ROBERT LIPSHITZ

Note that Chapter 10 of the textbook is “online only”. You can download it from the publisher; a copy is also available on the Canvas website (“Files”).

Required textbook problems (hand these in):

- (1) §5.6: 2, 5, 6, 10, 12.
- (2) §10.1: 2, 11, 13, 16.
- (3) §10.2: 2, 5, 11, 25.
- (4) §6.1: 10, 15, 16.

Suggested practice (don’t hand these in):

- Please read and make sure you can do the practice problems in Sections 5.6, 10.1, 10.2, and 6.1.
- Use Exercises 10.1.21, 10.1.22, 10.2.21, 10.2.22, 6.1.19, 6.1.20, and 6.1.22 for review.
- If you have some experience writing proofs, try Exercises 6.1.27, 6.1.28, 6.1.31,
- If you had trouble or got help with any of the assigned problems, solve another, similar problem (or two).

Bonus points. Sage, as usual. For this week:

- (1) Use Sage to check your answers to at least 4 of the problem above.
- (2) Use Sage to check the computation of the steady state vector $\vec{q}$ on page 21 of section 10.2. What power of G do you have to take in order to get the vector $\vec{q}$ to 6 digits of accuracy?
- (3) Bonus bonus points: figure out how to get Sage to produce a random-ish 100×100 stochastic matrix. Then find the steady-state vector of the associated “Google matrix” to 5 digits of accuracy.

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