

**Problem Set 3**  
**Modal Solutions of LTI Systems**

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**Reading:**

Linear Algebra Notes (see Readings).

Also at least Sections 5.1–5.3 of the text, but work on finishing Chapter 5.

Start on this problem set early!

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**Problem 3.1**

Problem 5.22 in the hardcover edition of SSI, but ignore the last part of (c) that asks whether the linearized model is reachable/observable. (This is Problem 5.20 in the softcover edition.)

**Problem 3.2**

Problem 5.6 (which is Problem 5.4 in softcover)

**Problem 3.3**

Problem 5.16 (which is Problem 5.5 in softcover)

**Problem 3.4**

Problem 5.26 (which is still Problem 5.26 in softcover)

**Problem 3.5**

Problem 5.10 (which is Problem 5.16 in softcover)

**Problem 3.6 (Optional)**

For additional practice, try Problems 5.2, 5.3, 5.4, 5.7, 5.11, 5.12, 5.13, 5.17, 5.18 (which are Problems 5.1, 5.13, 5.3, 5.6, 5.17, 5.10, 5.11, 5.7, 5.8 in softcover SSI).

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6.011 Signals, Systems and Inference  
Spring 2018

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