Today I began covering Sect. 1.3. Main topics were:

1) Definition of hitting times (called first return times in the text) and closely-related kth return times.

2) Definition of recurrent and transient states.

3) Main results covered are Lemma 1.3 and Example 1.13.

4) Stated Lemma 1.4, Theorem 1.5, and Lemma 1.6.

5) Ended with Example 1.14 at the end.

Notes:

1) Example 1.14 is relevant for Homework 2, and worth studying more carefully. I’ll say more about it on Thursday.

2) Lemma 1.6 is part of a more general theorem: suppose x is recurrent and x → y. Then y is recurrent and ρ_{xy} = ρ_{yx} = 1. (Theorem 1.5 can also be seen as a special case of the converse of Lemma 1.6.)