

Material for Week 7

Physics 4488/6562: Statistical Mechanics

<https://sethna.lassp.cornell.edu/Teaching/562/>

Exercises due Fri. Mar 07

Last correction at January 27, 2025, 2:23 pm

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The exercise with number N1.xxx are to be found in <https://sethna.lassp.cornell.edu/StatMech/SethnaExercises.pdf>

NOTE: The prelim will be distributed this Monday, and will be due Monday March 10. No exercises for this week, but pre-class questions should be uploaded to Canvas.

Monday

In-class question: [7.3](#) *Phase-space units and the zero of entropy*

Wednesday

Read: Chapter 7, Sec. 7.6 (Black body radiation and Bose condensation).

Pre-class question: [N1.4](#) *Bosons in two states*

In-class question: [7.22](#) *Light baryon superfluids*

In-class question: [7.23](#) *Why are atoms classical?*

Friday

Read: Chapter 7, Sec. (7.7) (Metals and the Fermi gas).

Pre-class question: [7.6](#) *Spin density matrix*

In-class question: [7.2](#) *Phonons and photons are bosons*

Monday

Read: PRELIM DUE.

Assigned exercise for everyone

- No exercise this week: prelim

Special topic exercises (6562 do one; 4488 do 7 during 14 weeks)

- No exercises this week: prelim