

Physics 140A-Introduction to Solid State Physics
Winter, 2016
Problem Set 4 (One more to go!)
Due Tuesday, March 1st

Lattice Vibrations: Thermal and Acoustic Properties

Reading: Omar, Sections 3.1 through 3.10 (only thorough Inelastic Neutron Scattering, plus two pages on thermal conductivity from Kittel as Supplemental Reading)

Questions and Problems in Omar from Chapter 3.

[1] **Question 3.1**

[2] **Question 3.4**

[3] **Problem 3.2**

[4] **Problem 3.5**

[5] **Problem 3.6**

[6] **Problem 3.10**

[7] **Problem 3.19**

[8] **Special: Derive Eq. 2.26 from the two equations preceding it**

[9] **Special: Derive Eqs. 3.50 and 3.51 from 3.44**