FOR ALL PROBLEMS: Think about the answers you obtain. Do they seem reasonable? If yes, then you have nothing more to do. If not, try to find any mistakes you may have made; if you can’t find anything wrong, comment on why you think your answer is unreasonable.

• 10.2

• 10.11. Note that you don’t need to derive any expressions here—use (and cite) any relevant equations from the lecture notes or Tipler and look up any required numerical values in the appropriate table(s) in Tipler.

• Extra problem 1. (a) What is the difference between a crystalline solid and an amorphous solid? (b) What are the two components of a crystalline structure? Make some simple sketches showing how a crystalline structure can be built from its components.

• Extra problem 2. (a) What are the Bravais lattices? (b) Define and sketch the simple cubic lattice. (c) Define and sketch the body-centered cubic lattice. (d) Define and sketch the face-centered cubic lattice.

• Extra problem 3. Find and sketch the plane in a simple-cubic structure that has the following Miller indices. Be sure to show all of your work and reasoning.
  (a) (201)
  (b) (112)