Department of Materials Science and Engineering
Massachusetts Institute of Technology
3.14 Physical Metallurgy – Fall 2003

Problem Set #3

Due Wednesday, October 1, 2003

3.1   Exercise 5.3

3.2   Exercise 5.10

3.3   Assume that a bcc crystal slips on {110}<111>. For a tensile axis parallel to the [123] crystal axis, calculate the Schmid factor for all possible slip systems. Discuss the sequence of events that occurs as the stress along [123] is increased to plastic yield.

3.4   What will the conjugate slip system be for the crystal in Problem 3.3?