CHAPTER 7

**DISLOCATIONS AND STRENGTHENING MECHANISMS**

**7-6, 7-11, and 7-24**

7.6 (a)Compare planar densities (Section 3.11 and Problem 3.54) for the (100), (110), and (111) planes for FCC.

(b) Compare planar densities (Problem 3.55) for the (100), (110), and (111) planes for BCC.

7.11 Sometimes cos φ cos λ in Equation 7.2 is termed the Schmid factor. Determine the magnitude of the Schmid factor for an FCC single crystal oriented with its [100] direction parallel to the loading axis.

7.24 The lower yield point for an iron that has an average grain diameter of 5 × 10-2 mm is 135 MPa (19,500 psi). At a grain diameter of 8 × 10-3 mm, the yield point increases to 260 MPa (37,500 psi). At what grain diameter will the lower yield point be 205 MPa (30,000 psi)?