

## Homework #2

Due: 2/5/18

1. (20) (a) For an fcc unit cell, calculate the radius,  $r$ , of the largest interstitial site in terms of the atom radius,  $R$ . (b) Repeat for a bcc unit cell.
2. (10) The dislocation density of a heavily worked metal is reported to be  $10^{10} \text{ mm}^{-2}$ . If the dislocations in a  $1 \text{ cm}^3$  cube were “unraveled” and laid end to end, what is the total dislocation length in meters? in miles?
3. (20) Text problem 3.43.
4. (20) Text problem 4.56.
5. (20) Text problem 4.59.
6. (10) Text problem 4.70.