

NORTHERN ILLINOIS UNIVERSITY

PHYSICS DEPARTMENT

Physics 283 – Modern Physics

Spring 2025

Problem Set #11

Problem Set Due: Thurs., May 1, 2025

Read Krane: Chapter 11

1. **OpenStax University Physics Vol. 3: Section 2.8:** Problem 99
2. **OpenStax University Physics Vol. 3: Section 2.8:** Problem 121

3. **Krane: Problem 4** **page 384**

Draw a figure of the bcc structure of CsCl labeled with distances between the atoms

4. **Krane: Problem 17** **page 385**

Show the proper way to do this problem (as I did in class with the integrals, but do not solve the integral—it's too complicated), and then explain Krane's approximation given in the solutions.

5. **Krane: Problem 23** **page 385**

Show the proper way to do this problem (as I did in class with the integrals, but do not solve the integral—it's too complicated), and then justify Krane's approach given in the solutions.

Part (b): which one is obviously the better conductor?

6. **Krane: Problem 28** **page 385**

7. **Krane: Problem 34** **page 386**

8. **Krane: Problem 36** **page 386**