PHYS 321 BCC & FCC Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The unit cell for the body-centered cubic crystal structure is shown below.



1. Show that the cube edge length, *a* and the atomic radius, R are
related by: $ a=\frac{4R}{\sqrt{3}}$

2. Show that the atomic packing factor is 0.68 for BCC.

1. The unit cell for the face-centered cubic crystal structure is shown below.



1. Find a relationship between the cube edge length, *a* and
the atomic radius, R
2. Find the atomic packing factor for FCC.