PHYS 101H Simple-Cubic crystal structure Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. How many atoms are inside the simple cubic unit cell?

2. Show the cube edge length, *a* and the atomic radius, *R* in
the figure.

3. How are the cube edge length, *a* and the atomic radius, *R* are
related for a simple cubic structure?

4. Calculate the density of polonium, Po, which has a simple cubic crystal structure. Its atomic radius = 0.168 nm and atomic weight = 208.98 g/mol. (Avagadro’s number = 6.022 x 1023) [<http://www.ptable.com/>]