PHYS 321 Simple-Cubic crystal structure Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



0. Metal: Po (Polonium)

1. How many atoms are inside the [simple cubic](https://www.youtube.com/watch?v=KNgRBqj9FS8) 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/>]