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1. The size of an atom is about  $\sim 10^{-10}\text{m}$ . The size of an atomic nucleus is  $\sim 10^{-14}\text{m}$ .  
**What part (by volume) of an atom does its nucleus take?**

Hint: recall the formulae for the volume of a sphere (see Slide #6 of Classwork #13 for help); using that, calculate volumes of nucleus and atom separately; then take a *ratio*. Alternatively, you may want to write down both volumes as formulae, then take an *algebraic ratio*, and only after that plug in the numbers to calculate your answer.