204_ Chapter 2: QUIZ What Hides in the Empty Space:

The diameter of the nucleus is about 1/10,000 the diameter of an atom.

Most atoms range in diameter from 1×10^{-10} to 5×10^{-10} meters.

The diameter of an average nucleus is 1×10^{-14} meters

1. The diameter of a quarter is 24.26mm, if it represents the nucleus, *how large would be the rest of the atom be?*

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Given that the volume of the quarter is $0.809 cm^3$. Calculate how much the quarter would weigh if it were made entirely of hydrogen nuclei (i.e., no empty space).

2. Simple multiply the volume by 1×10^{15} grams/centimeter^3,

   Give final answer in tons (2000lbs = 1 ton; 454g = 1lb)

3. This is the equivalent of how many USS Abraham Lincoln aircraft carriers? 97,000 tons = 9.7×10^4 tons= the USS Abraham Lincoln aircraft carriers.

http://www.pbs.org/wgbh/nova/sciencenow/3313/02.html
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