Name _____ Date _____ Period _____

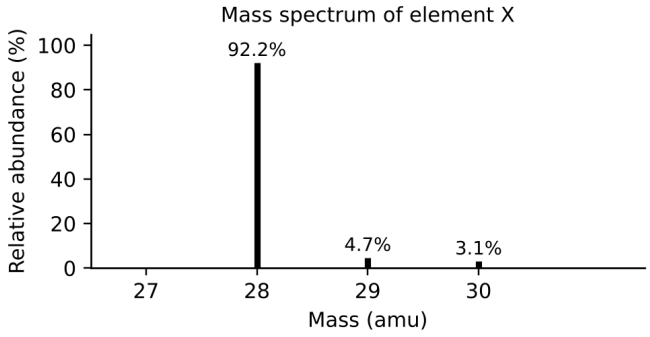
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1.2 Mass Spectra of Elements

AP Chemistry

Use a periodic table. Show your work for every calculation.

1. The mass spectrum of element X is shown. (a) Calculate the average atomic mass of X. (b) Identify X and explain your choice.

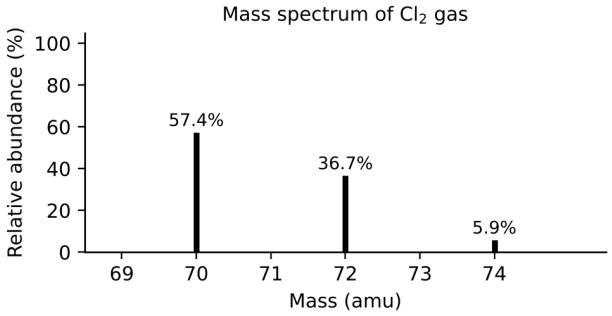


2. Bromine has two isotopes: Br-79 (78.92 amu, 50.69%) and Br-81 (80.92 amu, 49.31%). Calculate the average atomic mass of bromine.

3. Lithium has two isotopes, Li-6 (6.015 amu) and Li-7 (7.016 amu). The average atomic mass of lithium is 6.941 amu. Calculate the percent abundance of Li-6.

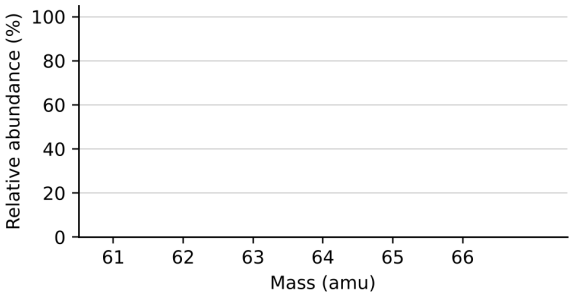
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4. Chlorine is 75.78% Cl-35 and 24.22% Cl-37. The mass spectrum of Cl_2 gas is shown. Explain why there are three peaks and why the peak at 70 is the tallest.



5. A student says, “The average atomic mass of boron is 10.81 amu, so most boron atoms have a mass of 10.81 amu.” Explain what is wrong with this claim.

6. Copper is 69% Cu-63 and 31% Cu-65. Sketch the mass spectrum of copper on the axes.



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