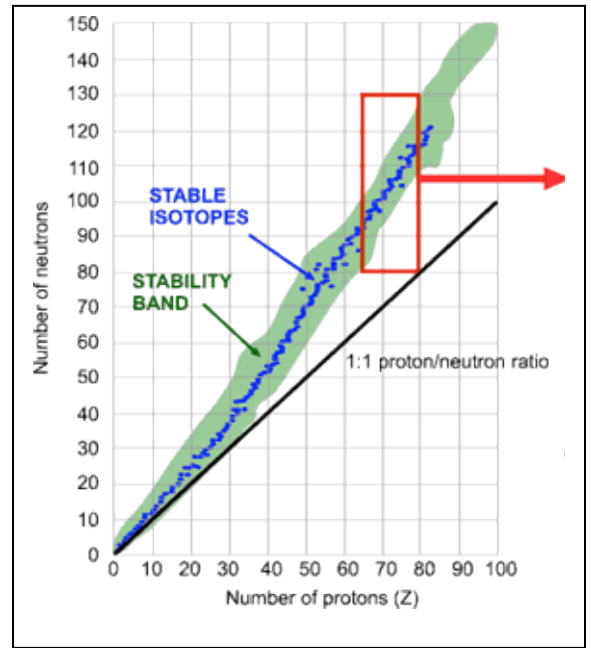


1. The image to the right shows the relationship between the number of neutrons and protons for stable nuclei.
  - a. As stable nuclei get larger, do the number of protons increase more quickly or slowly than the number of neutrons?

What would the graph look like if the opposite were true?

- b. Using your understanding of Coulomb's law, propose a reason that one subatomic particle needs to be more abundant than the other as nuclei get larger.



2. Two stable isotopes of lithium exist. Lithium-6 has an exact mass of 6.015 amu and lithium-7 has an exact mass of 7.016 amu.
  - a. How do you find the average mass of lithium?
  - b. What is the average mass of lithium?
  - c. Is this number closer to the mass of  ${}^6\text{Li}$  or  ${}^7\text{Li}$ ? Based on this, which isotope do you think is more abundant?
  - d. Calculate the natural abundance of each isotope.