

# The atomic mass of berium essay sample

[Science](#), [Chemistry](#)



1. How are isotopes of an element different from one another? How are they the same? (10 points)

The isotopes of an element have the same amount of protons, but a different amount of neutrons, so they vary in size.

2. Are mass number and atomic mass the same thing? Why or why not? (10 points)

The atomic mass and mass number are the same thing. The mass number is the sum of the protons and neutrons in an atom while the atomic mass is the total of protons and neutrons. They both should give the same number because they both take the sum of the protons and neutrons.

3. Use the concepts of relative abundance and relative weight to explain why carbon has an atomic mass of 12.011 amu when there are three isotopes of carbon weighing 12 amu, 13 amu and 14 amu. Wouldn't the average of these three be 13 instead of 12.011? (10 pts.)

The relative mass would give the average of 12.011, but with factoring in relative abundance, it presents the option that there could be a higher relative abundance for the isotope with the mass of 12amu as opposed to the ones with 13 or 14 amu.

4. Which isotope of beanium had the greatest effect on the calculated atomic mass for beanium? How do you know this? Was this what you expected? Why or why not? (10 points)

The kidneybeanium had the greatest effect on the calculated atomic mass for beanium. I know this because the kidneybeanium contributed the

greatest mass. I did expect it because the kidney beans used were significantly larger than the other beans.

5. Explain what relative weight is and why it is important to the calculation of atomic mass. (10 points)

The relative weight is the average weight per atom, and important to the calculation of the atomic mass because it gives an insight on how much a single atom should roughly weigh.

#### Part II

6. Using the list compiled in Part II of the lab, identify the similarities between substances with similar functions. Give three examples. (20 points)

With some of the substances, such as the ones that contain Ammonium, they serve similar functions. Those that contain Ammonium are used towards fertilizer and photography. Substances containing sodium clearly go towards specialized salts, but they also go towards cleaners.

#### Part III

7. What elements did you identify for Unknown #1, Unknown #2, and Unknown #3? (12 points)

For unknown #1 I got the formula NaOH. For unknown #2 I got Sodium bicarbonate, and for unknown #3 I got Aluminum oxide.

8. For Unknown #1, explain your reasoning in determining this identification. (10 points)

The chemical name for the first unknown was Sodium hydroxide. Knowing that the symbol for sodium is Na, I got the first part of the symbol. The

hydroxide is a combination of hydrogen and oxygen, giving the remainder of the symbol, which is OH.

9. For Unknown #2, explain your reasoning in determining this identification. (10 points)

The symbol for the second unknown was  $\text{NaHCO}_3$ . I know that Na is the formula for Sodium. The H and CO stand for Hydrogen and Carbonate, combined to make bicarbonate, forming the chemical name of Sodium bicarbonate.

10. For Unknown #3, explain your reasoning in determining this identification. (10 points)

The third unknown had the formula  $\text{Al}_2\text{O}_3$ . The Al stands for Aluminum, and the O stands for the oxygen, or oxide

### Submission

Complete the above questions in a word document and email the lab to your instructor via Rio Mail by the due date indicated in the Course Calendar under the Announcements Section. You can also submit your assignment by faxing it directly to your instructor. This is an option for those assignments that are not submitted electronically. Please check with your instructor for his or her specific fax number.