

## Skill Practice 14

**Practice Problems**  
**Average Atomic Mass**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Hour: \_\_\_\_\_

- A certain element exists as three different isotopes. 24.1% of all the isotopes have a mass of 75.23 amu, 48.7% have a mass of 74.61 amu, and 27.2% have a mass of 75.20 amu.
  - What is the average atomic mass of this element?
  - Use your periodic table to determine which element this is.
- An element exists as 4 different isotopes. 4.35% have a mass of 49.9461 amu, 83.79% have a mass of 51.9405 amu, 9.50% have a mass of 52.9407 amu, and 2.36% have a mass of 53.9389 amu.
  - What is the average atomic mass of this element?
  - What is the identity of this element?
- Calcium has three different isotopes. One has a mass of 35.00 amu; another has a mass of 41.00 amu; and another has a mass of 40.00 amu. Which isotope is the most abundant of the three? (HINT: Look at the periodic table at calcium's average atomic mass.)
- Several isotopes of a certain atom "X" exist. 4.35% of all X atoms have a mass of 39.946 amu. 83.79% have a mass of 41.941 amu, 9.50% have a mass of 42.941 amu, and 2.36% have a mass of 43.939 amu. What is the average atomic mass of atom X?

## Skill Practice 14

# Practice Problems

## Average Atomic Mass

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Hour: \_\_\_\_\_

- A certain element exists as three different isotopes. 24.1% of all the isotopes have a mass of 75.23 amu, 48.7% have a mass of 74.61 amu, and 27.2% have a mass of 75.20 amu.
  - What is the average atomic mass of this element?  
74.92 amu
  - Use your periodic table to determine which element this is.  
Arsenic (As)
- An element exists as 4 different isotopes. 4.35% have a mass of 49.9461 amu, 83.79% have a mass of 51.9405 amu, 9.50% have a mass of 52.9407 amu, and 2.36% have a mass of 53.9389 amu.
  - What is the average atomic mass of this element?  
51.99 amu
  - What is the identity of this element?  
Chromium (Cr)
- Calcium has three different isotopes. One has a mass of 35.00 amu; another has a mass of 41.00 amu; and another has a mass of 40.00 amu. Which isotope is the most abundant of the three? (HINT: Look at the periodic table at calcium's average atomic mass.)

The most abundant is the one with a mass of 40.00 amu.
- Several isotopes of a certain atom "X" exist. 4.35% of all X atoms have a mass of 49.946 amu. 83.79% have a mass of 51.941 amu, 9.50% have a mass of 52.941 amu, and 2.36% have a mass of 53.939 amu. What is the average atomic mass of atom X?  
41.714 amu