Average Atomic Mass Worksheet

1) Rubidium ($37p^+$) has two common isotopes, ^{85}Rb and ^{87}Rb. If the abundance of ^{85}Rb is 72.2% and the abundance of ^{87}Rb is 27.8%, what is the average atomic mass of rubidium?

$85 \times .722 = 61.37$

$87 \times .278 = 24.186$

85.556

85.56 amu

2) Uranium ($92p^+$) has three common isotopes. If the abundance of ^{234}U is 0.01%, the abundance of ^{235}U is 0.71%, and the abundance of ^{238}U is 99.28%, what is the average atomic mass of uranium?

$234 \times .0001 = 0.0234$

$235 \times .0071 = 1.6685$

$238 \times .9928 = 236.2864$

237.9783

237.98 amu

3) Titanium ($22p^+$) has five common isotopes: ^{46}Ti (8.0%), ^{47}Ti (7.8%), ^{48}Ti (73.4%), ^{49}Ti (5.5%), ^{50}Ti (5.3%). What is the average atomic mass of titanium?

$46 \times .08 = 3.68$

$47 \times .078 = 3.666$

$48 \times .734 = 35.232$

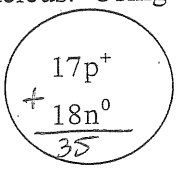
$49 \times .055 = 2.695$

$50 \times .053 = 2.65$

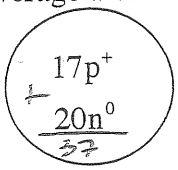
47.923

47.92 amu

4) The two isotopes of chlorine are shown below, each with its percent by mass abundance and the composition of its nucleus. Using the data, calculate the average atomic mass of chlorine.



75.53%



24.47%

$35 \times .7553 = 26.4355$

$37 \times .2447 = 9.0539$

35.49 amu