c2ws1   By: Dr. Robert Belford

Fill in the Blanks for the following Table

Atom Name	Number Neutrons	Number Electrons	Number Protons	Nuclide Symbol w/charge (if one)
Oxygen -16				
				$^{18}O^{-2}$
	74	54	53	
Carbon-14				
				$^{56}Fe^{+2}$
				$^{54}Fe^{+2}$
				$^{54}Fe^{+3}$
	125	78	82	
Strontium-90				
	84	54	56	

1. Calculate the atomic weight of neon (to the correct number of significant figures) composed of three naturally occurring isotopes with the following natural abundances and masses:

      a. 90.51% neon-20 (mass = 19.992 amu)
      b. 0.27% neon-21 (mass = 20.993 amu)
      c. 9.22% neon-22 (mass = 21.991 amu)

2. Silicon has three naturally occurring isotopes. Silicon-28 is 92.2% abundant and has a mass of 27.979 amu, silicon-29 is 4.705% abundant and has a mass of 28.968 amu, and silicon-30 is 3.10% abundant and has a mass of 29.957 amu. What is the average mass of silicon?

3. An element has two naturally occurring isotopes. Isotope 1 has a mass of 106.905 amu and a relative abundance of 51.8%. Isotope 2 has a mass of 108.904 amu and a relative abundance of 48.2%. Find the atomic weight of this element and, by comparison to the periodic table, identify it.

4. A fictitious element has two naturally occurring isotopes and has an atomic weight of 29.5 amu.
    a. If the natural abundance of isotope 1 is 33.7%, what is the natural abundance of isotope 2?
    b. If the mass of isotope 2 is 30.0 amu, what is the mass of isotope 1?

5. Chlorine has two naturally occurring isotopes. Chlorine-35 has a mass of 34.969 amu and a relative abundance of of 75.53%. Use the atomic weight of chlorine to determine the mass of the second chlorine isotope.