e) Which of the following would most difficult to lift into the back of a pickup truck? (I) a 100 lb bag of potatoes (II) a 15 gallon plastic bottle filled with water or (III) a 3.0 L flask filled with mercury (density of water = 1g/ml; density of Hg = 13.534 g/ml)

Part 2: Parts of the atom:

...One thing to remember, if an atom has no charge then the number of protons will equal the number of electrons.

1) How many protons are there in carbon 12?

2) How many neutrons are there in sodium 23?

3) If an oxygen atom is neutral, how many electrons does it have?

4) How many protons are there in uranium 235?

5) How many neutrons are there in uranium 235?

6) What is the average atomic mass of Mercury?

Part 3: Average Atomic Mass:

1) A new element Cornium (Cn) has been discovered with two isotopes, Sweet Cornium and Feed Cornium. $^{sweet}Cn$ has a mass of 0.82 amu and ^{feed}Cn has a mass of 0.78 amu. If the relative abundance of sweet Cornium is 35.8% and the relative abundance of feed Cornium is 64.2%, determine the average atomic mass for Cornium.

(.82 amu)(.358) + (.78 amu)(.642) = .79432 amu

= .79 amu

2) Close on the heels of Corniums great discovery was the discovery of Beanium (Bn). Beanium has 3 isotopes, $^{\text{pinto}}$Bn, $^{\text{kidney}}$Bn and $^{\text{BlackEyed}}$Bn. The masses of each are 1.25 amu, 1.36 amu and 0.98 amu respectively. If each has a relative abundance of 33.3% what is the average atomic mass for Beanium?

(1.25 amu)(.333) + (1.36 amu)(.333) + (.98 amu)(.333)

= 1.19547 amu

= 1.20 amu

3) Carbon 12 occurs in nature 98.89% of the time, and carbon 13 occurs 1.11% of the time. What is the average atomic mass of carbon?

^{12}C = 12.0000 amu ^{13}C = 13.0034 amu

(12.0000 amu)(.9889) + (13.0034 amu)(.0111)

= 12.01 amu

4) Lithium 6 has a relative abundance of 7.42% and lithium 7 a relative abundance of 92.58%. What is the average atomic mass of lithium?

^{6}L = 6.0151 amu ^{7}L = 7.0160 amu

(6.0151 amu)(.0742) + (7.0160 amu)(.9258)

= 6.94 amu

5) The fractional abundance of nitrogen 14 is 99.63% and for nitrogen 15 is 0.37%. What is the average atomic mass?

^{14}N = 14.0031 amu ^{15}N = 15.0001 amu

(14.0031 amu)(.9963) + (15.0001 amu)(.0037)

= 14.01 amu