## Chem 1 / Chille

1. Find the # protons, electrons & neutrons in the most common isotopes of the following elements. As done in class, show all work in the space provided.

Ca	Fe	Zn	W
nuclear:	nuclear:	nuclear:	nuclear:
charge	charge	charge	charge

## 2) All the **isotopes** of a given atom have

(1) the same mass number and the same atomic number

(2) the same mass number but different atomic

numbers

(3) different mass numbers but the same atomic number

(4) different mass numbers and different atomic

numbers

## 3) Calculating the weighted average atomic mass

Isotope	Mass (amu)	Percent Natural Abundance
<sup>-20</sup> Ne	19.99	90.9%
<sup>-21</sup> Ne	20.99	0.3%
<sup>22</sup> Ne	21.99	8.8%

a) In terms of subatomic particles, state one difference between these three isotopes of neon.

b) Based on the isotopic masses and the natural abundances shown in the data table, in the space provided below, calculate the average atomic mass of neon.

c) Based on the % natural abundances, why is the average atomic mass of neon closest to the mass of  $^{20}$ Ne?