

## Topic 4: Atomic Structure

1. Determine the number of protons, neutrons and electrons in each of the following:

a.  ${}^{39}_{19}\text{K}$       protons: \_\_\_\_\_ neutrons: \_\_\_\_\_ electrons: \_\_\_\_\_

b.  ${}^{23}_{11}\text{Na}^{1+}$       protons: \_\_\_\_\_ neutrons: \_\_\_\_\_ electrons: \_\_\_\_\_

c.  ${}^{208}_{82}\text{Pb}$       protons: \_\_\_\_\_ neutrons: \_\_\_\_\_ electrons: \_\_\_\_\_

d.  ${}^{33}_{15}\text{P}^{3-}$       protons: \_\_\_\_\_ neutrons: \_\_\_\_\_ electrons: \_\_\_\_\_

2. Write the symbol for the atom that contains

a. 24 protons, 21 electrons and 24 neutrons

b. 34 protons, 45 neutrons, 34 electrons

c. 8 protons, 10 neutrons, 10 electrons

3. What experimental evidence supports these statements?

a. The nucleus of an atom is small.

b. The atom consists of both positive and negative charges.

c. The nucleus of the atom is positive.