Question 1: Fill in the table below.

subatomic particle	charge	mass (in amu)
proton	+1	1
electron	-1	0
neutron	0	1

Question 2: The atomic number of an element is equal to the number of which two subatomic particles?

protons and electrons

Question 3: The mass number of an element is equal to the sum of which two subatomic particles?

protons and neutrons

Question 4: Fill in the table below.

element	protons	electrons	neutrons	atomic number	mass number
potassium	19	19	20	19	39
calcium	20	20	20	20	40
phosphorus	15	15	16	15	31
selenium	34	34	45	34	79
fluorine	9	9	10	9	19
carbon	6	6	6	6	12
iodine	53	53	74	53	127

Question 5: You can determine the identity of an element using the number of subatomic particles. Identify the elements below.

Element that has 10 protons and 10 electrons neon

Element that has 13 electrons and 13 electrons aluminum

Element that has 92 protons and 92 electrons uranium

Question 6: Classify each element below as a metal, non-metal or metalloid.

element	Class (metal, non-metal, metalloid)
lithium	metal
magnesium	metal
chlorine	non-metal
titanium	metal
silicon	metalloid
neon	non-metal
phosphorus	non-metal
boron	metalloid
chromium	metal

Question 7: Identify each element below when given the period and group number from the Periodic Table. Then classify them as one of the four special four groups (alkali metal, alkaline earth metal, halogen, or noble gas).

period	group number	element	alkali metal, alkaline earth metal, halogen, or noble gas
4	8A	krypton	noble gas
2	2A	beryllium	alkaline earth metal
1	8A	helium	noble gas
5	1A	rubidium	alkali metal
3	7A	chlorine	halogen

Question 8: Circle the element in each pair that is larger in size.

Na vs Al

I vs Br

O vs **S**

F vs **P**

Cl vs Ar

Question 9: For each element below, give the number of valence electrons and draw the electron dot structure. Hint: The number of valence electrons in an atom is NOT the same as the total number of electrons in an atom.

element	Number of valence electrons	Electron Dot Structure
hydrogen	1	H
bromine	7	Br
nitrogen	5	N
aluminum	3	Al
calcium	2	Ca
argon	8	Ar
carbon	4	C
francium	1	Fr
fluorine	7	F
boron	3	B