

Be sure to show all work, use the correct number of significant figures, circle final answers and use correct units in all problems.

1. Complete the missing information in the following table: (5 points)

Element name	Element Symbol	Atomic Number	Number of protons	Number of electrons in neutral atom
				17
			37	
		7		
	Sc			
Potassium				

2. True or false? **Circle** your answer. (5 points)

Marie Curie discovered the charge-to-mass ratio for an electron.

true false

The proton has a positive charge.

true false

Gamma rays are deflected easily by clothing.

true false

John Dalton discovered the neutron.

true false

A lithium atom usually has three protons and three neutrons in the nucleus.

true false

3. Short answer. (5 points)

What is the mass number of an atom of cobalt with 30 neutrons?

Which particle has the smallest mass: proton, neutron, or electron.

Which radioactive decay particle is a helium nucleus: alpha, beta, or gamma

How many electrons in a neutral atom of iodine?

How many protons are present in ${}_{34}^{79}\text{Se}$?

4. Calculate the atomic number and mass number for an atom with 38 protons, 41 neutrons and 36 electrons. What element is it?

What is the atom's symbol? Give the symbol for this isotope in the form ${}_Z^AX$. Is this atom electrically neutral? Explain. (5 points)

Answers

1. Complete the missing information in the following table: (5 points)

<i>Element name</i>	<i>Element Symbol</i>	<i>Atomic Number</i>	<i>Number of protons</i>	<i>Number of electrons in neutral atom</i>
chlorine	Cl	17	17	17
rubidium	Rb	37	37	37
nitrogen	N	7	7	7
scandium	Sc	21	21	21
Potassium	K	19	19	19

2. True or false? **Circle** your answer. (5 points)

False

True

False

False

False

3. Short answer. (5 points)

57

electron

alpha

53

34

4. Calculate the atomic number and mass number for an atom with 38 protons, 41 neutrons and 36 electrons. What element is it? What is the atom's symbol? Give the symbol for this isotope in the form ${}^A_Z\text{X}$. Is this atom electrically neutral? Explain. (5 points)

Strontium, Sr, ${}^{79}_{38}\text{Sr}$ Not neutral, different number of electrons and protons