

# Atomic Structure Practice Worksheet

**Part 1:** The following table includes information about the name, symbol, atomic number, atomic mass, and the numbers of protons, electrons, and neutrons for several elements. Use the periodic table to fill in the blanks.

Element	Symbol	Atomic number	Atomic mass	Protons	Neutrons	Electrons
						3
Hydrogen						
		17				
	Au					
			30.974			
Tungsten						
				30		
			126.9			
		14				

**Part 2:** Use the periodic table to answer the following questions about atoms and ions.

- How many protons, neutrons, and electrons are present in  $^{128}\text{Te}^{2-}$  ion?  
Protons = \_\_\_\_\_ Neutrons = \_\_\_\_\_ Electrons = \_\_\_\_\_
- How many protons, neutrons, and electrons are present in  $^{73}\text{Ge}^{4+}$  ion?  
Protons = \_\_\_\_\_ Neutrons = \_\_\_\_\_ Electrons = \_\_\_\_\_
- Write the complete chemical symbol for the ion with 82 protons and 80 electrons.  
\_\_\_\_\_
- What is the atomic mass of and element that has 37 protons, 43 neutrons, and 36 electrons? \_\_\_\_\_
- Write the complete chemical symbol for the ion with 73 protons, 108 neutrons, and 68 electrons? \_\_\_\_\_

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## Answers

Part 1: The following table includes information about the name, symbol, atomic number, atomic mass, and the numbers of protons, electrons, and neutrons for several elements. Use the periodic table to fill in the blanks.

Element	Symbol	Atomic number	Atomic mass	Protons	Neutrons	Electrons
Lithium	Li	3	6.941	3	4	3
Hydrogen	H	1	1.008	1	0	1
Chlorine	Cl	17	35.453	17	18	17
Gold	Au	79	196.967	79	118	79
Phosphorous	P	15	30.974	15	16	15
Tungsten	W	74	183.85	74	110	74
Zinc	Zn	30	65.38	30	35	30
Iodine	I	53	126.9	53	74	53
Silicon	Si	14	28.086	14	14	14

Part 2: Use the periodic table to answer the following questions about atoms and ions.

- How many protons, neutrons, and electrons are present in  $^{128}\text{Te}^{2-}$  ion?  
Protons = 52                      Neutrons = 76                      Electrons = 54
- How many protons, neutrons, and electrons are present in  $^{73}\text{Ge}^{4-}$  ion?  
Protons = 32                      Neutrons = 41                      Electrons = 36
- Write the complete chemical symbol for the ion with 82 protons and 80 electrons.  
 $\text{Pb}^{2+}$
- What is the atomic mass of and element that has 37 protons, 43 neutrons, and 36 electrons? 80
- Write the complete chemical symbol for the ion with 73 protons, 108 neutrons, and 68 electrons?  $\text{Ta}^{5+}$