

# Atomic Structure

Name: \_\_\_\_\_

Part 1: Fill in the following table about the parts of the atom. (AMU stands for atomic mass unit.)

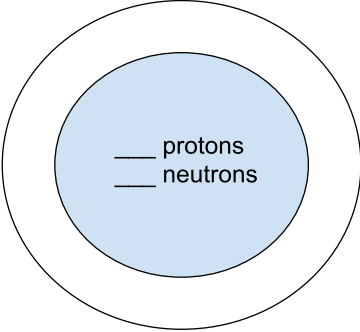
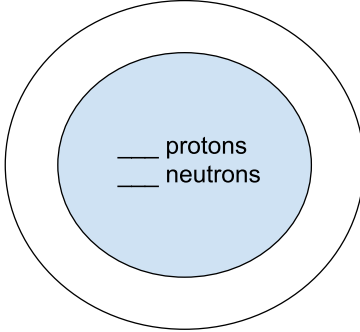
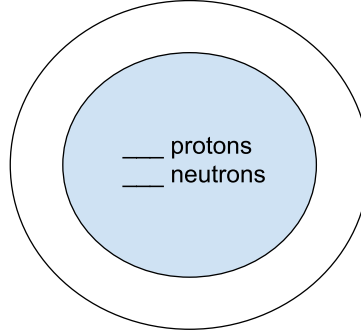
Part of the Atom	Electric Charge	Location in Atom	Mass (in AMUs)
proton			
neutron			
electron			

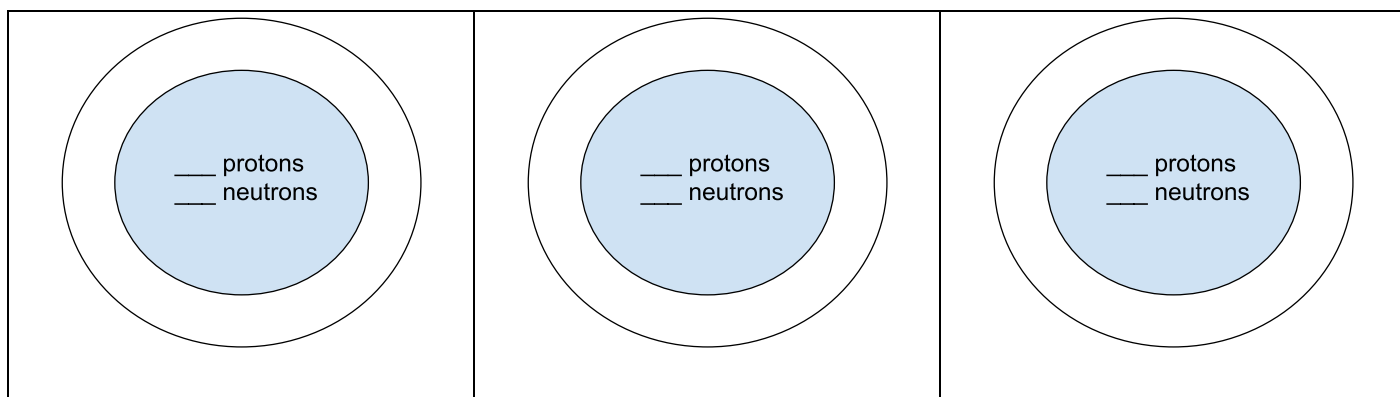
Part 2: Complete the following equations.

Atomic Number =	
Atomic Mass =	
Charge of ion =	

\*These equations should be memorized before the test.\*

Part 3: Fill in the blanks and draw the neutral atoms.

<p><b>Hydrogen</b> Atomic number= 1 Atomic mass = 1</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 33%;">protons</td> <td style="width: 33%;">neutrons</td> <td style="width: 33%;">electrons</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </table> <div style="text-align: center; margin-top: 20px;">  <p style="margin: 0;">___ protons ___ neutrons</p> </div>	protons	neutrons	electrons				<p><b>Helium</b> Atomic number= 2 Atomic mass = 4</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 33%;">protons</td> <td style="width: 33%;">neutrons</td> <td style="width: 33%;">electrons</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </table> <div style="text-align: center; margin-top: 20px;">  <p style="margin: 0;">___ protons ___ neutrons</p> </div>	protons	neutrons	electrons				<p><b>Calcium</b> Atomic number= 20 Atomic mass = 40</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 33%;">protons</td> <td style="width: 33%;">neutrons</td> <td style="width: 33%;">electrons</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </table> <div style="text-align: center; margin-top: 20px;">  <p style="margin: 0;">___ protons ___ neutrons</p> </div>	protons	neutrons	electrons			
protons	neutrons	electrons																		
protons	neutrons	electrons																		
protons	neutrons	electrons																		
<p><b>Lithium</b> Atomic number= 3 Atomic mass = 7</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 33%;">protons</td> <td style="width: 33%;">neutrons</td> <td style="width: 33%;">electrons</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </table>	protons	neutrons	electrons				<p><b>Aluminum</b> Atomic number= 13 Atomic mass = 27</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 33%;">protons</td> <td style="width: 33%;">neutrons</td> <td style="width: 33%;">electrons</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </table>	protons	neutrons	electrons				<p><b>Carbon</b> Atomic number= 6 Atomic mass = 12</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 33%;">protons</td> <td style="width: 33%;">neutrons</td> <td style="width: 33%;">electrons</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </table>	protons	neutrons	electrons			
protons	neutrons	electrons																		
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protons	neutrons	electrons																		



Part 4: Complete the table for the elements with the following atomic numbers.

Element Symbol and Charge	Atomic Number	Atomic Mass	Protons	Neutrons	Electrons
$B^{+3}$	5	11			
$N^{-3}$	7			7	
$Ar^0$			18	22	
$Na^{+1}$		23			10
$K^{+1}$	19			21	
$Br^{-1}$		80		45	
$O^{-2}$	8	16			
$Fe^{+3}$		56	26		

Part 5: For each of the complete chemical symbols, tell how many protons, neutrons and electrons there are.

Symbol	Protons	Neutrons	Electrons
${}_{17}^{35}Cl^{-1}$			
${}_{50}^{119}Sn^{+4}$			
${}_{64}^{157}Gd^{+3}$			
${}_{33}^{75}As^{-3}$			
${}_{40}^{91}Zr^{+2}$			