Matter Homework #1 both sides! Name _____

Read the MATTER BASICS. Use Table S !! Use it to help you answer these.

Define these terms in your own words, use examples to expand your definitions.	
Matter	
Element	
Compound.	
Substance	
Mixture	
Heterogeneous	
Homogeneous	
What elements are Hg + W? Why are these sym-bols used & not "M" and "T"?	
List 3 substances that you have experienced in at least 2 physical states. Try for at least one that you have experienced in all three states of matter.	

How to decide PHASES with Table S. If your temp is BELOW the melting point, you are frozen SOLID. If your temp is between melting and boiling then you are in the LIQUID phase. If your temp is ABOVE the boiling point, you are in the GAS phase. Put the "S", "L", and "G" on your table now. If your Beryllium is at 955 Kelvin, you are clearly in the SOLID phase. That is because 955 K is below the melting point, so it's not yet melted (still solid). Boron at 4033 Kelvin is in the LIQUID phase. That temp is above melting, but below boiling point = LIQUID.

Table S
Properties of Selected Elements

Atomic Number	Symbol	Name	First Ionization Energy (kJ/mol)	Electro-negativit	Melting Point (K) S	Boiling* Point (K) L	G
1	H	hydrogen	1312	2.2	14	20.	
2	He	helium	2372	—	—	4	
3	Li	lithium	520.	1.0	454	1615	
4	Be	beryllium	900.	1.6	1560.	2744	
5	B	boron	801	2.0	2348	4273	

Fill in this table	Chemical Symbol	Is this an element, compound, or mixture? (E, C, or M)	Phase at room temp. 298 K (S, L, G, or AQ)
gold			
gasoline	C_8H_{18}		
carbon dioxide			
gallium			
brass	x		
	Hg		
carbon			
Gatorade	x		
	Br_2		
iron			
	$NaCl_{(AQ)}$		
table sugar	$C_{12}H_{22}O_{11}$		
iodine			

Matter HW #2 both sides name _____

Memorize this chart, you will not be able to move ahead in chem unless you understand all of the vocabulary and remember how these properties exist.

Important Properties of the States of Matter

Property	SOLIDS	LIQUIDS	GASES
volume	Definite	Definite	Indefinite
shape	Definite	Indefinite	Indefinite
compressibility	Almost zero	Almost zero	Easily
heat expansion	Slight	Slight	Greatly

Convert 25°C into Kelvin.
Determine the phase of each of these substances at that temperature (use table S)

substance formula	phase at 25°C (S, L, or G)
Co	
H_2O	
Mg	
Cl_2	
Br_2	
CO_2	
I_2	
Xe	
Hg	
Ti	

Determine which phase best fits each line… Solid, Liquid or Gas (S, L, or G)

which has…	symbols
Which element at left has the highest BP	
Which phase is easily compressed?	
Which phases are least likely to be compressed?	
Which phase always fills any container you put them into?	
Which phase fills only the bottom of any container you put it into?	
Which phase always retains its shape no matter what container it's in?	
Which has indefinite shape and definite volume?	
Which compound at left has the highest Boiling point?	

How many atoms are in each of these compounds?			
H_2SO_4	$MgSO_3$	$Al(C_2H_3O_2)_3$	$C_5H_{10}O_5$
CH_4	$C_{10}H_{22}$	KCl	NaBr
CF_4	H_3PO_4	NaOH	MgO
$Sn(MnO_4)_2$	$(NH_4)_2Cr_2O_7$	$C_6H_{12}O_6$	$Ba(OH)_2$
NaClO	N_2	$CH_3CH_2COOCH_3$	$Co(BrO_4)_3$