KET Per:____

Name:

1. Write in the space, "metals", "metalloids", or "nonmetals" to indicate which type of element the statement describes. The statement may apply to more than one type of classification.

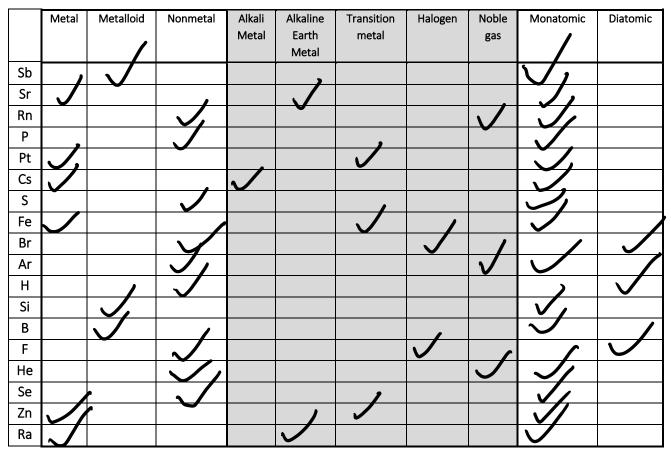
	<i>,</i> ,
tals	Located on the left side of the P.T.
ut is I m	Located on the right side of the P.T.
1-tele	Solids are brittle
Fris	Majority of the elements
nital s	Gain electrons to form negative ions
-mitals	Located along the "staircase"
tals	Have luster
x 4 x 1 8	Malleable
als	Lose electrons to form positive ions
hal (Ductile
retals	Fair/Good Conductors of heat & electricity
netals	Poor electrical & heat conductors
nitals	Many are gases at STP
si-metale	All elements are solids.
mitall	Typically have high electronegativities
nis	Typically have low ionization energies
	nitals ni-metals

2. Use Table S to fill in the names and states of each element below. Check all the boxes which describe the element.

		Physical Properties			Chemical Properties			
	at	State at			Conductor		Electrons	
	Name	STP (s, l,	Brittle	Malleable /ductile	Good	Poor	Lose	Gain
		or g)				1		1
С		S	\mathbf{V}			\mathbf{V}		
Ag		2		\checkmark	V,		\mathcal{I}	
Mg		2	_	J	\checkmark	,	J	,
I		5	J,		-	V,		
S		Ś	J	,		\checkmark	,	
Au		ζ		<i>,</i>	V.		J,	
Fe		S		J		,		
Br						V ,		\checkmark
Ar		G				V,	nit	her
Н		୶)	
Hg		٥					\mathbf{V}	

BrINCIHOF = diatomic

3. Put a check in each box that correctly describes the element given.



4. Write in the space, "alkali metals", "alkaline earth metals", "transition metals", "halogens", or "noble gases" to indicate which group each statement is describing.

		Elements Typically Form
a.		Colored compounds and
	transition metals	solutions
b.	Moble gapes	Full valence shell
С.	alkali metais	Most active (reactive) metals
d.	halojens	Most active nonmetals
e.	noble gases	Monatomic gases
f.	holeochs	Diatomic elements
g.	noble Jacks	Stable and unreactive
h.	halisony	7 valence electrons
i.	alkaline earth metals	2 valence electrons
j.	alkali metals	Form ions with a +1 charge
k.		Elements rarely gain or lose
Ν.	noble garos	electrons
		Elements tend to have multiple
١.	transition mara is	oxidation numbers (charges)

Elements always form +2 ions alkaline earth m. when bonding with other elements noble gases Have negligible electronegativity n. values

5. Give 2 Expected Properties of Each Element Listed Below:

a. Sulfur bri Hle 2011 non conductor high ionization high electronegativity Calcium (EN) wigh b. Calcium (TC) Lustous mallable good conductor LOW EN + LOW 75 c. Argon Mondatomic gas non conductive No EN High IG

6. Would an element with the electron configuration 2-8-6 be expected to have a low (r high) onization energy? Explain your answer.

Nonnetals become stable mostly through gaining elictrons therefore it takes a lot of ening to remove an elutur.

Group Properties: Practice Problems						
Concept Task: Be able to identify an element based on group name			Concept Task: Be able to identify and classify an element based on group properties.			
Which e 1 Neo 2) Oxy		3) Fluorine 4) Nitrogen	Which set contains eleme found in nature in their a 1 K and Na 2 K and S			
Which o 1) Na 2) H	f these element is an alk	aline earth element? 3) K 4 Ra	Element X is a solid that i and has six valence electr the Periodic Table would 1) 1 2) 2	rons. In which group on		
1) tran		3) alkali metal 4) alkaline earth metal	Element Z is in Period 3 of Which element is Z if it for formula of Z ₂ O ₃ ? 1) Na			
The eler	ment in Group 17 Period	4 is a(n)	N ²	·/		
1) tran halo		3) alkali metal 4) noble gas	Which of these oxides wi solution when dissolved 1) Na ₂ O 2) SO ₂			

8. Base your answers to parts (a-g) on the following set of elements:

Ar, Na, S, Si

a. Would these elements be expected to have similar chemical properties? Explain.

b. How many energy shells do all of these elements have? Which element(s) are non-metals? c. Nr Which element(s) are metals? d. Which element(s) are metalloids? e. Which element has the greatest electronegativity? f. Which element(s) is/are brittle at STP? g. h. Which element would be expected to be most reactive? Explain. No > closest to becoming 5 table