

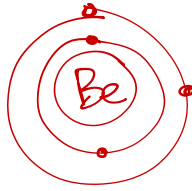
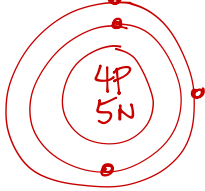
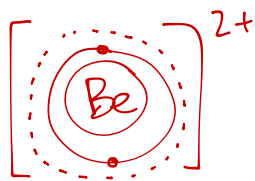
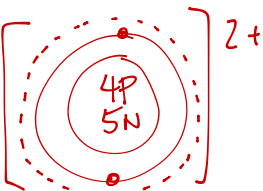
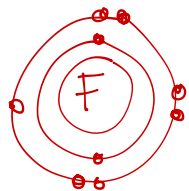
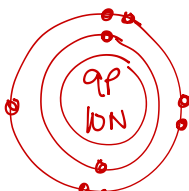
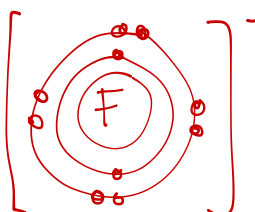
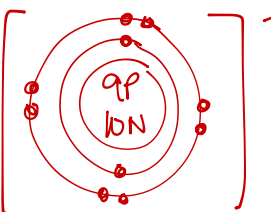
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2. Complete the following table:

Symbol	Name	Atomic Number	Mass Number	Number of Protons	Number of Electrons	Number of Neutrons
Ga	GALLIUM	31	70	31	31	$70 - 31 = 39$
Cu	COPPER	29	64	29	29	$64 - 29 = 35$
Pt	PLATINUM	78	195	78	78	$195 - 78 = 117$
Hg	Mercury	80	201	80	80	$201 - 80 = 121$
Pb	LEAD	82	207	82	82	$207 - 82 = 125$
I	IODINE	53	127	53	53	$127 - 53 = 74$
Xe	XENON	54	131	54	54	$131 - 54 = 77$

3. Draw a Bohr, Bohr Rutherford and Lewis Dot Diagram for the following:

	Bohr	Bohr Rutherford	Lewis Dot
Beryllium Atom			$\text{Be} \cdot$
Beryllium Ion			$[\text{Be}]^{2+}$
Fluorine Atom			$\cdot \ddot{\text{F}} \cdot$
Fluorine Ion			$[\ddot{\text{F}}:]^{-}$

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4. Define the following terms and give an example for each:

A. Atom **SMALLEST UNIT of MATTER, MADE UP of PROTONS, NEUTRONS & ELECTRONS**B. Ion **CHARGED PARTICLE (hydrogen ion)**C. Cation **POSITIVELY CHARGED ATOM (calcium ion)**D. Anion **NEGATIVELY CHARGED ATOM (Fluorine ion)**E. Isotope **ATOMS WITH THE SAME NUMBER of PROTONS BUT DIFFERENT NEUTRONS**
HYDROGEN ISOTOPESF. Diatomic Molecule **TWO of THE SAME ATOM BONDED TOGETHER (H₂, O₂)**

5. Count how many atoms are in each of the chemical formulas below by completing the tables:

a) 2H₂O₂

Type of Atom	# of Atoms
H	2×2=4
O	2×2=4
Total # of Atoms	8

d) CH₃OH

Type of Atom	# of Atoms
C	1
H	4
O	1
Total # of Atoms	6

b) C₂₇H₄₆O

Type of Atom	# of Atoms
C	27
H	46
O	1
Total # of Atoms	74

e) Al₂(CrO₄)₃

Type of Atom	# of Atoms
Al	2
Cr	3
O	12
Total # of Atoms	17

c) 2NaCN

Type of Atom	# of Atoms
Na	2
C	2
N	2
Total # of Atoms	6

f) 4Ti(ClO)₃

Type of Atom	# of Atoms
Ti	4
Cl	3×4=12
O	3×4=12
Total # of Atoms	28

Name: _____

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6. Explain how can you tell if a compound is ionic or molecular by looking at its chemical formula.

METAL + NONMETAL = IONIC

NON-METAL + NON-METAL = MOLECULAR

7. Identify if each of the following compounds is ionic or molecular

a) H ₂ O	M	I	e) HCl	M
b) CO	M		f) ZnS	I
c) PbO	I		g) CuBr ₂	I
d) SnSe	I		h) Cs ₃ N	I

8. Name the **ionic compounds only** from question 7.

c) LEAD OXIDE

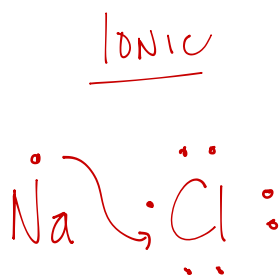
g) COPPER BROMIDE

d) TIN SELENIDE

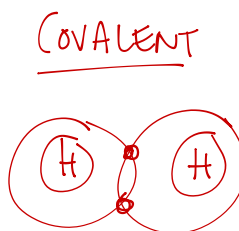
h) CESIUM IODIDE

f) ZINC SULFIDE

9. Describe how covalent and ionic bonds are different using the examples of H₂ and NaCl.



GIVE & TAKE



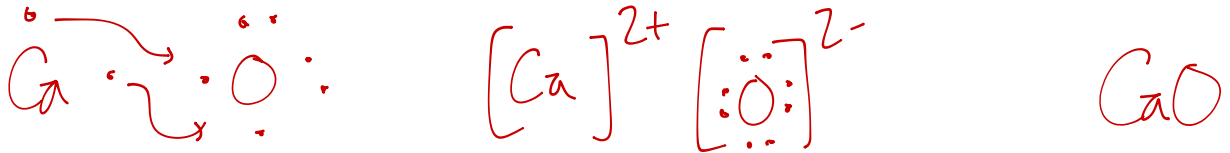
SHARING

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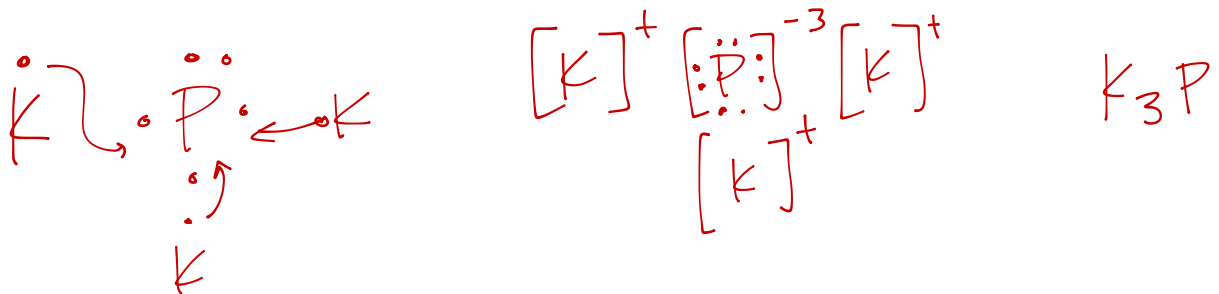
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10. Draw Lewis Dot Diagrams to determine the chemical formula of each compound. Remember, you should only end up with **ions with complete valence shells**.

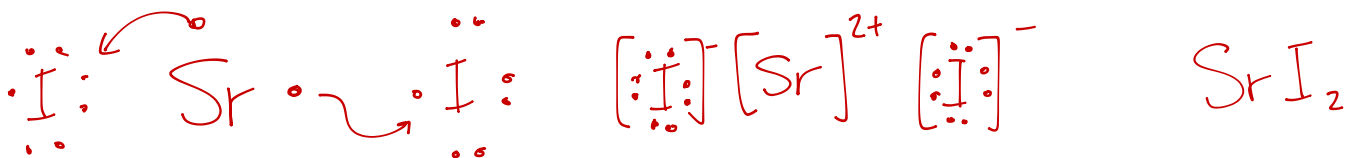
a) Calcium + Oxygen



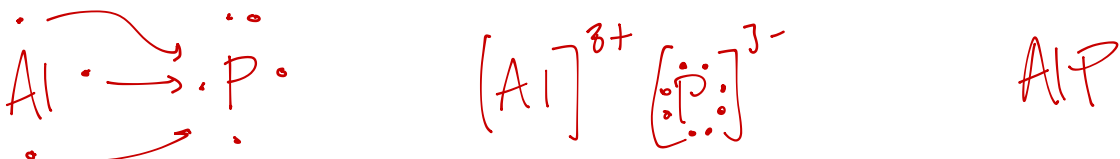
b) Potassium + Phosphorus



c) Strontium + Iodine



d) Aluminum + Phosphorus



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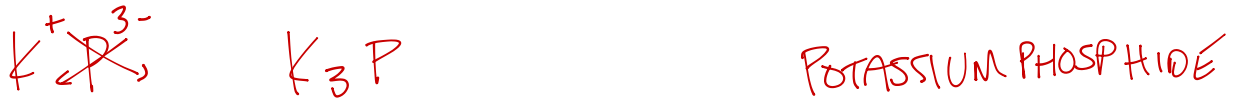
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11. Use the crossover method to determine the chemical formula of the following compounds then name them.

a) Calcium + Oxygen



b) Potassium + Phosphorus



c) Strontium + Iodine



d) Aluminum + Phosphorus



Scientific Method/Experimental Design Review

1. Give a reason for why it is important to not include personal pronouns in lab reports or research papers?

TO KEEP SCIENCE FAIR AND UNBIASED

2. Why is it important to do research on the question before forming a hypothesis or procedure?

TO MAKE SURE THE QUESTION HADN'T ALREADY BEEN ANSWERED
OR TO SEE WHAT RESEARCH HAS ALREADY BEEN DONE ON THE QUESTION

3. What is the purpose of a conclusion in a lab report?

- SUMMARIZE RESULTS

- STATE WHETHER OR NOT HYPOTHESIS WAS CORRECT

Name: _____

Date: _____

4. Create hypotheses for the following questions:

a) How is the rate at which a plant grows effected by the amount of exposure to sunlight?

ANSWERS WILL VARY

IF THE PLANT IS EXPOSED TO MORE SUNLIGHT, THEN IT WILL GROW FASTER BECAUSE PHOTOSYNTHESIS WILL HAPPEN FASTER

b) How does the number of goals a hockey player scores relate to the length of their stick?

IF A PLAYER'S HOCKEY STICK IS LONGER, THEN THEY WILL SCORE MORE GOALS BECAUSE THERE WILL BE MORE VELOCITY ON THEIR SHOT

c) How does playing video games effect a persons eye-hand coordination?

IF MORE VIDEO GAMES ARE PLAYED THEN EYE-HAND COORDINATION WILL INCREASE BECAUSE VIDEO GAMES REQUIRE A PLAYER TO DEVELOP FINE MOTOR SKILLS

5. Write a procedure for changing a battery in a remote control. Remember to number steps and put it in past tense (with no personal pronouns of course!)

1. BATTERY COVER WAS REMOVED FROM REMOTE
2. OLD BATTERY WAS REMOVED FROM REMOTE
3. NEW BATTERY WAS INSERTED INTO REMOTE
4. BATTERY COVER WAS REPLACED

6. Write some qualitative and quantitative observations about the pencil or pen you are using to write.

COLOUR
INK COLOUR
TEXTURE
TYPE

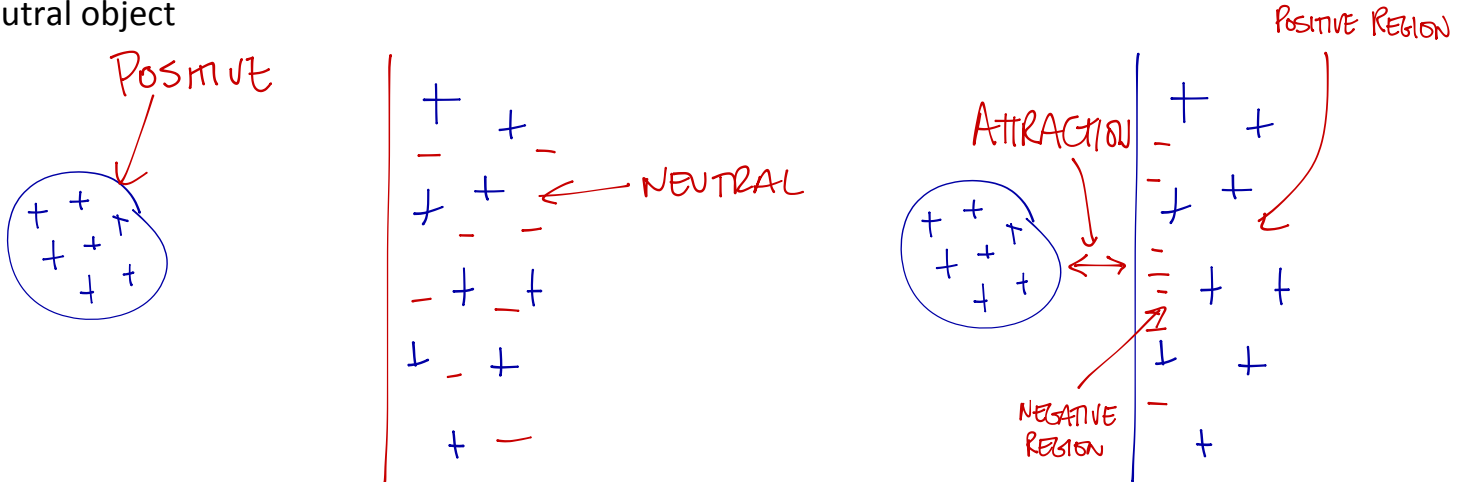
LENGTH
WEIGHT
DIAMETER

Electricity Review

1. What is the law of electric charges?

- 1. OBJECTS THAT HAVE LIKE CHARGES REPEL
- 2. OBJECTS THAT HAVE OPPOSITE CHARGES ATTRACT

2. Use a diagram to describe what happens when a positively charged object comes near a neutral object

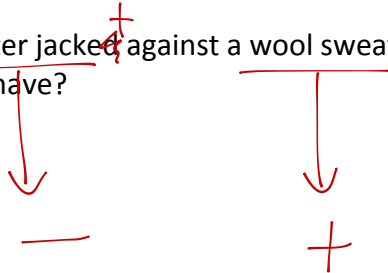


3. Use the electrostatic series on the right to answer the following:

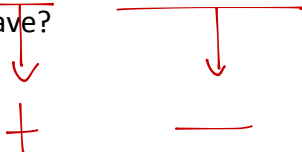
a) You rub your cotton socks along a vinyl floor. What charge does each material now have?



b) You rub a polyester jacket against a wool sweater. What charge does each material now have?



c) You rub your hair on a rubber balloon. What charge does each material now have?



Triboelectric Series

	Air
	Human body
	Glass
	Nylon
	Wool
	Lead
	Cotton
	Aluminum
	Paper
	Steel
	Wood
	Gelatin
	Nickel, copper
	Gold, platinum
Natural rubber	
	Sulfur
	Acetate
	Polyester
	Celluloid
	Urethane
	Polyethylene
	Vinyl
	Silicon
	Teflon

Name: _____

Date: _____

4. Describe the difference between charging by induction, conduction and friction.

INDUCTION: CHARGING BY PLACING CHARGED OBJECTS CLOSE TOGETHER

CONDUCTION: CHARGING BY TOUCHING CHARGED OBJECTS TOGETHER

FRICITION: CHARGING BY RUBBING OBJECTS TOGETHER

5. Define and give an example of each...

a) Conductor: MATERIAL THAT ALLOWS A FLOW OF ELECTRONS

ex. COPPER

b) Insulator:

MATERIAL THAT DOES NOT ALLOW A FLOW OF ELECTRONS

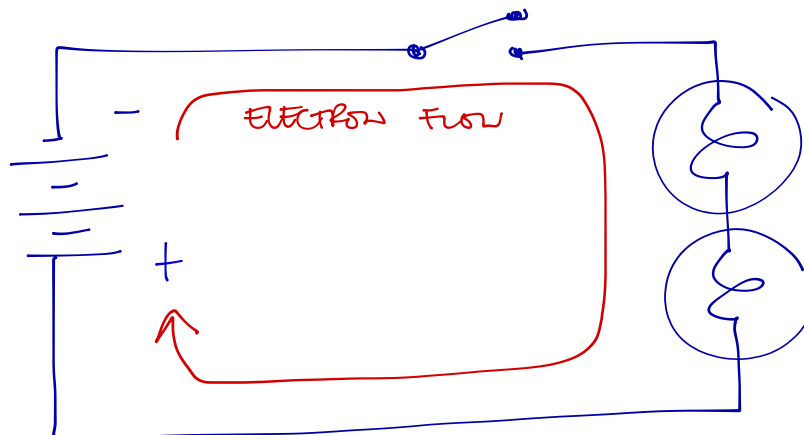
ex. RUBBER

c) Semiconductor:

MATERIAL THAT ALLOWS SOME ELECTRON FLOW

ex. SILICON

6. Draw a circuit with a 3-cell battery, a switch and 2 lamps in series. Indicate the direction of flow of electrons.

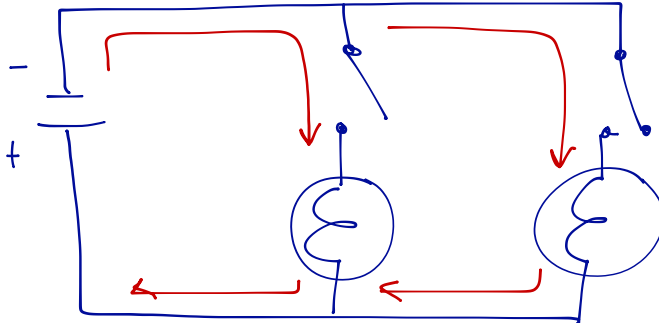


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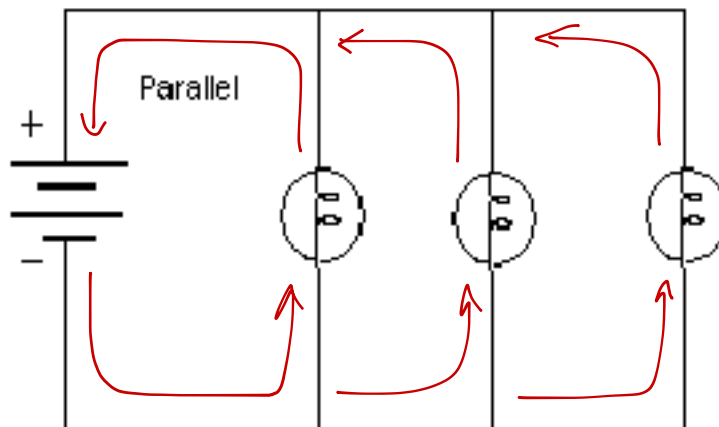
PARALLEL

Date: _____

7. Draw a circuit with a 1-cell battery and 2 lamps in ~~series~~. Each lamp should have a separate switch so that only one light turns off when the switch is off. Indicate the direction of flow of electrons.



8. Indicate all possible paths for an electron to flow in the circuit below:



9. A compact fluorescent bulb has a resistance of 700Ω . The voltage through the bulb is 120V. Calculate the current through the light bulb.

$$I = \frac{V}{R} = \frac{120}{700} = 0.17 \text{ A}$$

10. An iPhone charger uses 2.1 amps of power at 5.1 Volts. Calculate the resistance of the charger.

$$R = \frac{V}{I} = \frac{5.1}{2.1} = 2.43 \Omega$$

This review does not contain everything we covered. Think about what is missing!