Answer

Periodic Table Worksheet Fun

1. Two elements X and Y have the following properties.

Element X	Element Y
Metallic luster Two valence electrons Located in the 4th period	Without metallic luster Four valence electrons 6 protons

Which symbols from the periodic table correspond to elements X and Y respectively?

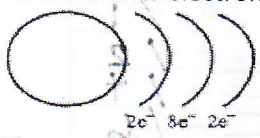
A) Ca and C B) K and B C) K and C D) Ca and B

2. Which of the following statements about the properties of metals is correct?

A) They are malleable but are not shiny.
B) They conduct electricity but are not malleable.
C) They do not conduct electricity and are not shiny.
D) They react with acids and conduct heat.

3. Four elements from the periodic table are described below.

Element A: It reacts vigorously with water and its electrons are distributed among three energy levels.
Element B: It is located in Period 3 and used to disinfect or to kill bacteria.
Element C: Its electron configuration is



Element D: Its outermost energy level is full and it uses 3 energy levels.

Complete the table below by indicating the chemical symbol and the name of the chemical family for each of these elements.

Element Chemical	Symbol Chemical	Family Name
Element A	Na	Alkali Metals
Element B	Cl	Halogens
Element C	Mg	Alkaline Earth Metals
Element D	Ar	Noble/Inert Gases

4. An element has the following characteristics:

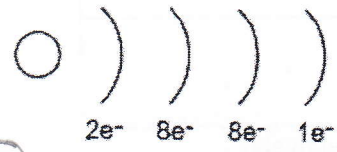
- It has a metallic luster.
- It conducts electricity.
- It has 3 valence electrons.
- It is a metalloid.

What is this element?

A) Aluminum B) Boron C) Silicon D) Sodium

5. The following diagram represents the Bohr-Rutherford atomic model for an element in the periodic table.

Which of the following is a correct statement about this element?



A) It is an alkali metal that has 19 protons and is located in Period 4.
B) It is a nonmetal that is not very reactive and that has 19 protons and 1 valence electron.
C) It is a halogen that has 19 electrons and is located in Period 1.
D) It is a highly reactive metal that has 20 protons.

Identify the element: Potassium (K)

6. The table below gives the chemical symbols of four elements and provides space to indicate the following characteristics: the number of valence electrons, the number of energy levels, chemical reactivity (none, low or high) and the family number. *Using the periodic table, fill in the blank boxes in the table.*

Element Symbol	# Valence E-	# Energy Levels	Chemical Reactivity	Family Number
Li	1	2	High	IA / 1
Mg	2	3	High	IIA / 2
C	4	2	Low	IVA / 14
Cl	7	3	Low	VIIA / 7
Ne	8	2	None	VIIIA / 8

7. The following table gives the description of four chemical elements.

- **1:** It is located in Period 1, has two electrons in its outermost energy level and may be used to inflate balloons. He
- **2:** It is located in Period 2, has one valence electron and reacts vigorously with water to form a base. Li
- **3:** It is located in Period 2, has two completely filled energy levels and is chemically stable. Ne
- **4:** It is located in Period 3, has one less electron than the closest inert gas and may be used as a disinfectant. Cl

Which of these elements belong to the same chemical family?

A) 1 and 2 (B) 1 and 3 C) 2 and 3 D) 2 and 4

8. Which element corresponds to each of the following statements?

STATEMENTS	
1	This element belongs to the halogen family and has only 4 energy levels.
2	This element has 3 valence electrons in its second energy level.
3	This element is an alkaline earth metal located in Period 3.
4	This element has only one energy level and it is completely filled.

1: Bromine (Br)

2: Boron (B)

3: Magnesium (Mg)

4: Helium (He)

Answer

More Periodic Table Worksheet Fun!

1. Which family is described? **Give the name.**

A- I have 1 electron on my outer shell	Alkali Metals
B- One of the elements has 35 as the atomic number	Halogens
C- I have 2 electrons on my outer orbital	Alkaline Earth Metals
D- We are un-reactive	Noble/Inert Gases
E- I will produce a salt when I mix with a metal	Halogens
F- My shells are all full	Noble/Inert Gases
G- The most reactive family	Alkali Metals
H- Never found as a compound always as an element	Noble/Inert Gases
I. I have 7 electrons on my outer shell	Halogens
J. One of my elements has an atomic number is 18	Noble/Inert Gases
K. I have the element that has 17 electrons	Halogens

2. What element am I? **(Use symbol)**

A- I am found in period 2 and have 3 valence electrons	B
B- I am found in family III A and use 3 orbitals	Al
C- I have 20 protons	Ca
D- I have 2 energy shells and each are full	Ne
E- I am an alkaline earth metal and in period 2	Be
F- I am a halogen with 3 orbitals	Cl
G- I am a metalloid with three energy levels	Si
H- I have 1 valence electron with 4 energy levels	K
I- I am an inert gas with 1 energy level	He
J- I have 2 orbitals and 5 valence electrons	N
K- I am the least reactive element is the alkali family.	Li

3. State whether the following are metals, metalloids or non-metals.

Elements	Characteristic 1	Characteristic 2	Characteristic 3	Metal, nonmetal or metalloid
Element A	Malleable	conducts electricity	not ductile	Metalloid
Element B	Conducts heat	Reacts with acids	Shiny	Metal
Element C	Solids, liquids and gases	Accepts electrons	No conduction	Nonmetal

4. Explain what a valence electron is an electron in the outermost shell

5. List the elements in the alkali metal family Li, Na, K, Rb, Cs, Fr

6. Give 2 characteristics of the alkali metal family. reactive, forms a salt with halogens, soft, exist as compounds

7. Explain the commonality between elements in the same group. Same # of valence e⁻

8. When halogens are combined with metals what are produced? Salts

9. Why is hydrogen placed where family 1 is even though it does not belong to that family?
It only has 1 valence e^-

10. How can you identify an element that is a metalloid? Has characteristics of both metals + nonmetals. found along the staircase

11. Name three metalloids: Si, B, Ge, As, Sb, Te

12. Draw the Lewis diagram for the neutral form and ionic form for each of the following elements.

Lewis	H	He	N	F	Be	B
Neutral	H·	He:	·N·	·F:	Be·	B·
Ion	H^+	X	$:N:^{3-}$	$:F:^-$	Be^{2+}	B^{3+}

13. Determine if each statement is true or false.

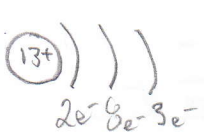
a- Elements in the same period have the same number of valence electrons. F
b- Elements in the same group have the same number of valence electrons. T
c- Aluminum (Al) is a metalloid. F
d- Na, Mg and Al all have the same number of orbits. T
e- Cl has 3 valence electrons. F
f- Li and Be have the same number of ions. F

14. What was incorrect about Rutherford's atomic model?
Electrons do not move freely

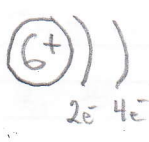
15. How did Bohr improve Rutherford's atomic model?
Electrons are located in specific orbitals/energy levels

16. Make a Rutherford Bohr model for the following elements:

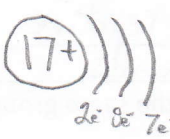
Al



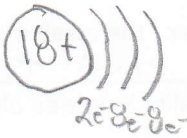
C



Cl



Ar



K