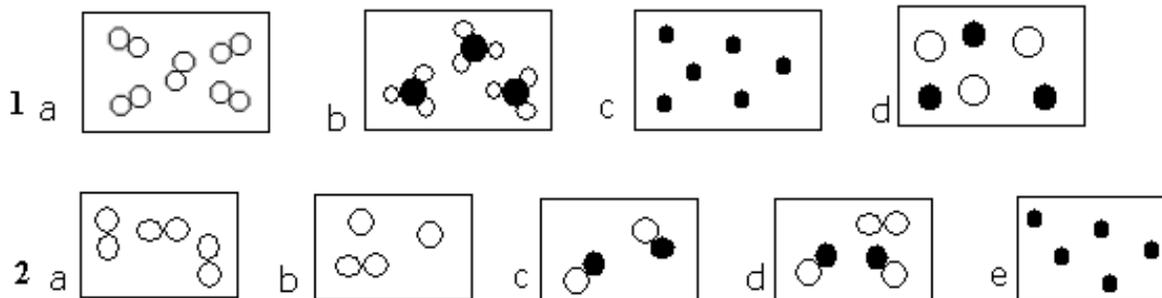


## CHM 130 Worksheet for Matter

1. Which state of matter does not have its own shape, but does have a volume?
2. Which state of matter has constant shape and volume?
3. Which state of matter does not have its own shape or volume?
4. Which state of matter is the most dense?
5. Which state of matter is largely empty space?
6. Label the following as element, compound or mixture:



7. What is the name for the following elements: K, Na, Cl, S, N, Al, Mg, Ag, Au, Pb, and Hg?
8. What is the symbol for phosphorus, fluorine, calcium, carbon, iodine, and argon?
9. List the five diatomic gases.
10. What is the only diatomic solid?
11. List the noble gases.
12. List the semi-metals.
13. What two elements are liquids?
14. Are these properties physical or chemical? Orange, explosive, hard, rough, bitter, toxic, dense, and combustible.
15. What is the difference between chemical and physical changes?
16. List the 6 physical changes that occur between the states of matter.
17. What is the formula for water after it has boiled?

## Answers

1. Liquid
2. Solid
3. Gas
4. Solid
5. Gas
6. 1a. element, b. compound, c. element, d. mixture, 2a. element, b. mixture, c. compound, d. mixture, e. element
7. K-potassium, Na-sodium, Cl-chlorine, S-sulfur, N-nitrogen, Al-aluminum, Mg-magnesium, Ag-silver, Au-gold, Pb-lead, Hg-mercury
8. P, F, Ca, C, I, Ar
9. H<sub>2</sub> hydrogen, Cl<sub>2</sub> chlorine, F<sub>2</sub> fluorine, N<sub>2</sub> nitrogen, O<sub>2</sub> oxygen
10. Iodine, I<sub>2</sub>
11. He, Ne, Ar, Kr, Xe, Rn
12. B, Si, Ge, As, Sb, Te, Po, At
13. Mercury and bromine
14. Orange-phys, explosive-chm, hard-phys, rough-phys, bitter-phys, toxic-chm, dense-phys, and combustible-chm.
15. Physical changes do not change the formula – all the atoms remain bonded in the same fashion, only the state of matter changes. Chemical changes change the formula – you produce a totally different chemical with atoms bonded in a different fashion.
16. Melting, freezing, boiling, condensing, sublimation, deposition.
17. After boiling water turns into steam, but it is still H<sub>2</sub>O so H<sub>2</sub>O(g).