

Name: _____

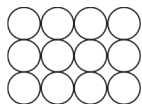
Date: _____

- In a comparison of metals to nonmetals, metals tend to have
 - lower melting points and greater conductivity than nonmetals.
 - lower conductivity and lower density than nonmetals.
 - higher density and lower melting points than nonmetals.
 - greater conductivity and higher melting points than nonmetals.
- Generally, how do atomic masses vary throughout the periodic table of the elements?
 - They increase from left to right and top to bottom.
 - They increase from left to right and bottom to top.
 - They increase from right to left and top to bottom.
 - They increase from right to left and bottom to top.
- Which of the following is the *most* important factor in determining an element's place in the periodic table?
 - Number of protons
 - Number of neutrons
 - Atomic Charge
 - Atomic Density

- Group I (the alkali metals) includes lithium (Li), sodium (Na), and potassium (K). These elements have similar chemical properties because they have the same _____.
 - numbers of protons and neutrons
 - numbers of electrons in the outer energy level
 - numbers of protons in the nucleus
 - numbers of neutrons in the nucleus
- The pictures below show the position of different elements on the periodic table. Which picture has an X in the locations of the three elements that would be most similar in the way they react?
 - | | | |
|---|--|--|
| X | | |
| X | | |
| X | | |
 - | | | |
|---|---|---|
| X | X | X |
| | | |
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|---|---|---|
| X | | |
| | X | |
| | | X |
 - | | | |
|---|---|---|
| | | X |
| | X | |
| X | | |

- Which statement *correctly* describes both gases and liquids?
 - Their shapes stay the same in any container.
 - Their shapes change when they are in different containers.
 - Their volumes stay the same in any container.
 - Their volumes change when they are in different containers.

7. A scientist uses an instrument to observe the pattern of molecules in a substance. The picture below shows what the scientist sees.



What state of matter is the scientist *most* likely observing?

- A. gas B. liquid C. vapor D. solid
8. Within a substance, atoms that collide frequently and move independently of one another are most likely in a
- A. liquid. B. solid.
C. gas. D. crystal.
9. Solids have a definite shape and volume. This is because
- A. the molecules in solids move past each other easily.
B. the molecules in solids stay in a definite location and vibrate.
C. the molecules in solids move freely in all directions.
D. the molecules in solids do not move at all.
10. A container is filled with 100 mL of liquid and placed in a freezer. The liquid in the container freezes at 0°C . A second container filled with 120 mL of the same liquid and placed in the freezer.
- At what temperature will the liquid in the second container freeze?
- A. -10°C B. -1°C
C. 0°C D. 10°C

11. A gas becomes more soluble in liquid when
- A. its particles are larger.
B. pressure is greater.
C. the mixture is stirred.
D. the temperature is raised.
12. Many laboratory preparations of solutions call for stirring the solvent while adding the solute. Which of the following is always an effect of this procedure?
- A. It decreases the reactivity of the solute.
B. It decreases the solubility of the solute.
C. It brings the solute and solvent rapidly into contact.
D. It produces a double displacement reaction.

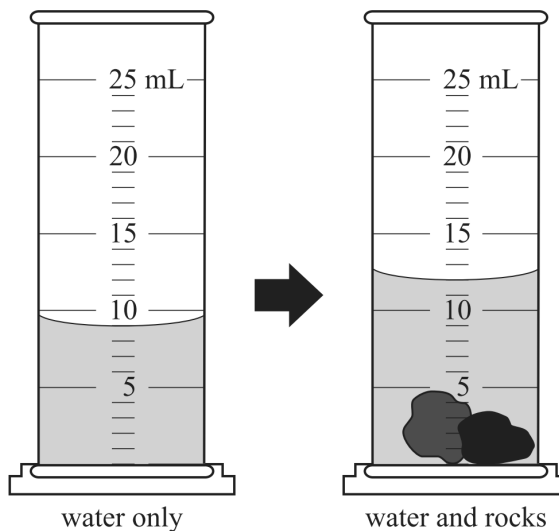
13. The solubility of a substance can be described in a variety of ways. Some references may use descriptive terms for solubility, such as those in the table illustrated below.

Descriptive terms	Parts of solvent needed for 1 part solute
Very soluble	<1
Freely soluble	1–10
Soluble	10–30
Sparingly soluble	30–100
Slightly soluble	100–1,000
Very slightly soluble	1,000–10,000
Practically insoluble or insoluble	>10,000

Using the table above as a reference, what descriptive term would be used for a medication that required 4,000 mg of water to dissolve 200 mg of the drug?

- A. soluble
- B. slightly soluble
- C. sparingly soluble
- D. very slightly soluble

14. A student puts water in a graduated cylinder and carefully adds two small rocks.



What is the volume of the rocks?

- A. 2 mL
 - B. 3 mL
 - C. 5 mL
 - D. 12 mL
15. Which of the following units *best* represents the density of an object?

- A. kg
- B. hr
- C. m/s^2
- D. g/cm^3