**Gas Laws Quiz** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. Each of these flasks (above) contains an equal number of gas molecules and are at the same temperature. In which container is the pressure **lowest**?
	1. Flask 1
	2. Flask 2
	3. Flask 3
	4. Flask 4



1. Each of these flasks (above) contains an equal number of gas molecules and are at the same pressure. In which container is the temperature **highest**?
	1. Flask 1
	2. Flask 2
	3. Flask 3
	4. Flask 4



1. Each of these flasks (above) contains an equal number of gas molecules. In which container is the pressure **highest**?
	1. Flask 1
	2. Flask 2
	3. Flask 3
	4. Flask 4
2. Why does the pressure inside a container of gas increase if more gas is added to the container?
	1. There is an increase in the number of collisions between particles and the walls of the container.
	2. There is an increase in the temperature of the gas.
	3. There is a decrease in the volume of the gas.
	4. There is an increase in the force of the collisions between the particles and the walls of the container.
3. If the volume of a container of gas is increased, what will happen to the pressure inside the container?
	1. The pressure will increase.
	2. The pressure will not change.
	3. The pressure will decrease.
	4. The pressure depends on the type of gas.
4. If a water bottle is squeezed, what happens to the pressure of the gas inside?
	1. It increases.
	2. It stays the same.
	3. It decreases.
	4. The pressure depends on the type of gas.
5. What happens to the temperature of a gas when it is compressed?
	1. The temperature increases.
	2. The temperature does not change.
	3. The temperature decreases.
	4. The temperature becomes unpredictable.
6. Not all gas law problems have Kelvin (K) as the unit of temperature. They can be expressed in Celsius and Fahrenheit. Convert 178 °C to K
	1. 424 K
	2. 541 K
	3. 451 K
	4. 513 K
7. What happens to litmus paper in acidic solutions?
	1. red litmus turns blue
	2. blue litmus turns red
	3. yellow litmus turns green
8. Given the neutralization reaction: 2 HI + Ca(OH)2 🡪 CaI2 + 2 HOH which compound is a salt?
	1. HI
	2. Ca(OH)2
	3. CaI2
	4. HOH
9. An acid solution exactly neutralized a base solution according to the equation acid + base → salt + water. If the neutralized mixture contained the salt MgBr, the pH of the aqueous mixture would be closest to
	1. 3
	2. 7
	3. 9
	4. 11
10. In the reaction: H3PO4 +3 H2O ↔3 H3O+ + PO4 3– The acids is
	1. H3PO4
	2. H2O
	3. H3O+
	4. PO4 3–
11. Given the reaction: HF(g) + H2O(l) → H3O+ (aq) + F– (aq) Which reactant acted as a Brönsted-Lowry acid?
	1. H2O(l), because it accepted protons
	2. H2O(l), because it produced hydronium ions
	3. HF(g), because it reacted with chloride ions
	4. HF(g), because it donated protons
12. How many milliliters of 0.115 M HCl are required to exactly neutralize 25.0 milliliters of 0.1380 M KOH?
	1. 30.0 mL
	2. 3.00 mL
	3. 20.8 mL
	4. 2.08 mL
13. The concentration of NaOH is 0.5 M, if 20 mL is needed to titrate 25 mL of acid, what is the concentration of the acid?
	1. 0.875 M
	2. 0.0029 M
	3. 0.29 M
	4. 0.00875 M
14. A solution of a base differs from a solution of an acid in that the solution of a base
	1. has a greater [H3O+ ]
	2. is able to conduct electricity
	3. has a greater [OH– ]
	4. is able to cause an indicator color change
15. According to Arrhenius theory, which species does an base produce in aqueous solution?
	1. hydrogen ions
	2. sodium ions
	3. hydroxide ions
	4. chloride ions
16. Which pH change represents a tenfold increase in the concentration of H+ ?
	1. pH 3 to pH 1
	2. pH 5 to pH 7
	3. pH 4 to pH 3
	4. pH 13 to pH 14
17. Which pH indicates an acidic solution?
	1. 11
	2. 7
	3. 5
	4. 12
18. As an aqueous solution becomes more basic, the hydroxide ion concentration
	1. remains the same
	2. decreases
	3. increases
	4. need more information
19. The pH of a 0.1 M HCl solution is closest to
	1. 1
	2. 3
	3. 7
	4. 10
20. What is the pH of a 0.0095 M solution of lithium hydroxide (LiOH)?
	1. 2.02
	2. 4.50
	3. 9.50
	4. 11.98

Use the combined gas law for the next two questions. $\frac{P\_{1}V\_{1}}{T\_{1}}= \frac{P\_{2}V\_{2}}{T\_{2}}$

1. 6.0 L of gas exerts a pressure of 2.5 atm. When the pressure is increased to 10.0 atm, the gas volume is \_\_\_
	1. 1.0 L
	2. 1.5 L
	3. 1.7 L
	4. 25 L
2. A sample of N2 gas occupies 0.50 L at 555 mmHg and 62 C. If its volume changes to 0.400 L at 122 C what is the new pressure?
	1. 818 mmHg
	2. 422 mmHg
	3. 0.763 mmHg
	4. 1320 mmHg