Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ UGA myID \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The volume of a rigid container is cut in half. What happened to the pressure? T and n were held constant.
   1. Halved
   2. **Doubled**
   3. Increased by less than double.
   4. Decreased by less than half.
2. The Kelvin temperature of a flexible container was tripled. What happened to the volume? P and n were held constant.
   1. **Increased by 3x**
   2. Increased by 1/3x
   3. Decreased by 3x
   4. Decreased by 1/3x
3. Gas was released from a rigid container isothermally until the number of moles had been cut in half. What happened to the pressure?
   1. **Halved**
   2. Doubled
   3. Decreased to 1/4
   4. Quadrupled
4. The Kelvin temperature of a rigid container was increased by 4x. The pressure inside the container increased by 3.5x. Propose a reasonable explanation.
   1. This is the amount it should have increased.
   2. **The container has a leak.**
   3. Gas was added to the container.
   4. The container volume changed.
5. A helium ballon has a volume of 2.32 L at 40 °Celsius. What is the temperature in Celsius when the volume reaches 2.58 L?
   1. 348 °C
   2. 44 °C
   3. 621 °C
   4. **75 °C**
6. The pressure of oxygen gas inside a rigid container is 5.00 atm at 25.0 °C. What is the pressure when the temperature is -10.0 °C?
   1. 5.67 atm
   2. **4.41 atm**
   3. -2.00 atm
   4. 0.227 atm
7. A diver blows a 0.750 L air bubble underwater, and its pressure decreases from 2.25 to 1.03 atm as it rises. What is the new volume of the bubble?
   1. **1.64 L**
   2. 0.343 L
   3. 3.02 L
   4. 0.463 L
8. A 2.5 L balloon contained 0.010 mol of an ideal gas. How much gas was removed from the balloon when the volume reached 0.75 L?
   1. 3.0x10-3 mol
   2. **7.0x10-3 mol**
   3. 1.8x102 mol
   4. 2.3x10-2 mol
9. What pressure is exerted by 0.450 g of oxygen gas at 25.0 °C if the gas is in a 0.650 L container?
   1. 1.06 atm
   2. 0.0445 atm
   3. 7.53 x 10-4 atm
   4. **0.529 atm**
10. A 6.00 L balloon has a pressure of 0.849 atm. If there are 0.320 g of He in the balloon, what is its temperature in Kelvin?
    1. 63.7 K
    2. 392 K
    3. **776 K**
    4. 503 K
11. A sealed balloon is filled with 1.00 L of He at 23 °C and 1.00 atm. The balloon rises to where the pressure is 0.289 atm and the temperature is -31 °C. What is the new balloon volume?
    1. 4.66 L
    2. -4.66 L
    3. **2.81 L**
    4. 0.356 L
12. A person accidentally swallows a 0.050 mL drop of liquid oxygen, O2, which has a density of 1.149 g/mL. What volume of gas will be produced at 37 °C and 1.00 atm?
    1. **4.57x10-2 L**
    2. 5.00x10-5 L
    3. 5.45x10-3 L
    4. 9.13x10-1 L
13. A gas mixture has a total pressure of 15.6 atm. There are 0.25 mol of Gas A and 1.25 mol of Gas B. What is the partial pressure of Gas A?
    1. 13 atm
    2. **2.6 atm**
    3. 3.9 atm
    4. 19.5 atm
14. A three-gas mixture contains 0.250 atm of Gas A, 0.450 atm of Gas B, and 0.350 atm of Gas C. What is the mole fraction of Gas B?
    1. 0.238
    2. 0.333
    3. 0.643
    4. **0.429**
15. A mixture contains two different gases. Gas A has a higher molar mass than Gas B. What is true about the partial pressures of the gases?
    1. Gas A has a higher partial pressure.
    2. Gas B has a higher partial pressure.
    3. The partial pressures are equal.
    4. **There isn't enough information.**
16. Two moles of ammonia gas completely decompose into hydrogen and nitrogen gases. What is the mole fraction of each gas in the mixture?
    1. 0.50 N2, 0.50 H2
    2. 0.17 N2, 0.50 H2, 0.33 NH3
    3. **0.25 N2, 0.75 H2**
    4. 0.75 N2, 0.25 H2
17. If the temperature of a flexible container filled with an ideal gas increased, what would happen to the density of the gas?
    1. The density would increase.
    2. **The density would decrease.**
    3. Temperature does not affect density.
    4. It depends on the molar mass of the gas.
    5. It depends on the mass of the gas sample.
18. A flexible container held 0.5 moles of helium. If 0.5 moles of hydrogen gas were added to the container, what would happen, provided temperature was held constant?
    1. The pressure would double.
    2. The pressure would be cut in half.
    3. **The volume would double.**
    4. The volume would be cut in half.
19. How would the situation change if the container in question 18 were rigid instead of flexible?
    1. **The pressure would double.**
    2. The pressure would be cut in half.
    3. The volume would double.
    4. The volume would be cut in half.
20. What is the pressure, in atm, exerted by 25.6 moles of an ideal gas at 10.5 °C when it is confined in a cylindrical tank that has a radius of 12.5 cm and a height of 1,755 cm? The volume of a cylinder is V = πr2h.
    1. **0.691 atm**
    2. 0.0256 atm
    3. 6.91 x 10-4 atm
    4. 2.56 x 10-5 atm
    5. 6.91 atm