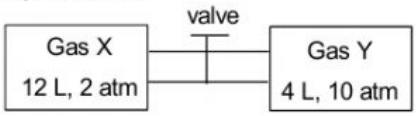
10. The following figure shows two flasks connected by a valve. Each flask contains gas X and gas Y separately at temperature T.



A. 1.5 atm C. 4.0 atm

B. 2.5 atm D. 6.0 atm

11. If 27 L of gas at a temperature of 67 ^{0}C and a pressure of 93 atm, what will be the pressure of the gas if the temperature increase to 94°C and the volume decrease to 12 L?

A. 114.5 atm C. 238.9 atm

B. 225.9 atm D. 149.1 atm

12. A gaseous mixture contains 5.0 moles of nitrogen and 10.0 moles of helium. The total pressure in the container is 3.0 atm. What is the partial pressure of the nitrogen?

A. 0.5 atm C. 1.0 atm

B. 2.0 atm D. 3.0 atm

13. How many moles of propane gas are in a 7.0 L tank at 20°C and 5.45 atm of pressure?

A. 1.59 mol C. 0.917 mol

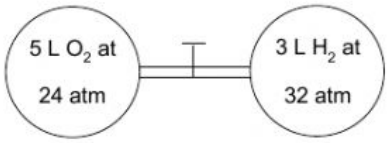
B. 23.2 mol D. 0.629 mol

14. When a sample of potassium chlorate, $KClO_3$ is heated, potassium chloride and oxygen gas is produced and it is collected over water. At 25°C and 0.9916 atm, a 100 mL oxygen is collected. Determine the mass of $KClO_3$ used in the experiment. Given the vapour pressure of water at 25°C is 23 torr.

A. 0.9613 g C. 0.0838 g

B. 0.1257 g D. 0.321 g

15.

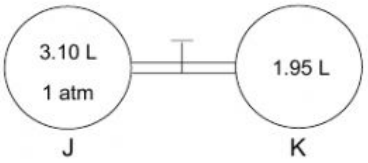


Two tanks were connected by a closed valve. Each tank is filled with gas as shown above and both are at the same temperature. The valve is opened to allow the gases to mix. After the gases have mixed, what is the total pressure?

A. 15 atm C. 27 atm

B. 12 atm D. 56 atm

16.



Referring to the above diagram, a sample of ideal gas is enclosed in bulb **J**, 1 atm with capacity of 3.10 L and another bulb **K** is evacuated. When the stopcock is opened, the gas fills both the bulbs. If the temperature remains constant, determine the new pressure of the gas.

A. 1.59 atm C. 1.00 atm

B. 0.61 atm D. 0.63 atm

17. 5.00 g helium gas is added to a 1.00 L balloon containing 1.00 g helium gas. What is the new volume of the balloon? Assume no change in temperature and pressure.

A. 1.2 L C. 0.167 L

B. 1.75 L D. 6.0 L

18. A 5.00 dm^3 sample of gas at 303 K contains nitrogen gas at 0.725 atm and hydrogen gas at 0.292 atm. Determine the total number of moles of gas.

A. 0.215 mol C. 0.146 mol

B. 0.205 mol D. 0.059 mol