Assignment 1

Due on 2019-09-04, 23:59 IST

The first entry to qualify for this assignment has passed.

1. A 1 L flask contains 0.5 mol of an ideal gas. If the pressure of the gas is 2.0 atm and the temperature is 300 K. Calculate the internal energy of the gas. (Ans: 750 J)

2. A 2.0 L vessel initially contains 0.1 mol of an ideal gas at a temperature of 300 K and a pressure of 1.0 atm. The gas is heated at constant volume. Calculate the final temperature. (Ans: 450 K)

3. A 1.0 L vessel contains 0.5 mol of an ideal gas at a pressure of 2.0 atm and a temperature of 300 K. The gas is then compressed to a final volume of 0.5 L at constant temperature. Calculate the final pressure. (Ans: 4.0 atm)

4. A 1.0 L vessel contains 0.2 mol of an ideal gas. The pressure of the gas is increased by 50% at constant temperature. Calculate the final volume of the gas. (Ans: 0.60 L)

5. A 0.5 L vessel contains 0.1 mol of an ideal gas. The pressure of the gas is increased by 50% at constant temperature. Calculate the final volume of the gas. (Ans: 0.33 L)

6. A 1.0 L vessel contains 0.5 mol of an ideal gas at a pressure of 2.0 atm and a temperature of 300 K. The gas is then compressed to a final volume of 0.5 L at constant temperature. Calculate the final pressure. (Ans: 4.0 atm)

7. A 1.0 L vessel contains 0.2 mol of an ideal gas. The pressure of the gas is increased by 50% at constant temperature. Calculate the final volume of the gas. (Ans: 0.60 L)

8. A 0.5 L vessel contains 0.1 mol of an ideal gas. The pressure of the gas is increased by 50% at constant temperature. Calculate the final volume of the gas. (Ans: 0.33 L)