

1. The pressure on 2.50 L of anesthetic gas is changed from 760. mm Hg to 304 mm Hg. What will be the new volume if the temperature remains constant? (6.25 L)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{T_2} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

2. If a sample of gas occupies 6.8 L at 327 °C, what will be its volume at 27 °C if the pressure does not change? (3.4 L)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{T_2} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

3. A gas has a pressure of 50.0 mm Hg at 540 K. What will be the pressure at 200 K if the volume does not change? (18.5 mm Hg)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{T_2} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

4. A container with an initial volume of 1.0 L is occupied by a gas at a pressure of 1.5 atm at 25 °C. By changing the volume, the pressure of the gas increases to 6.0 atm as the temperature is raised to 100 °C. What is the new volume? (0.31 L)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{T_2} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

5. A 5.0 L air sample at a temperature of -50 °C has a pressure of 800. mm Hg. What will be the new pressure if the temperature is raised to 100 °C and the volume expands to 7.0 L? (956 mm Hg)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{T_2} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

6. A 3.50 L gas sample at 20 °C and a pressure of 650 mm Hg is allowed to expand to a volume of 8.00 L. What is the final temperature in degrees Celsius if the final pressure of the gas is 425 mm Hg? (165 °C)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{\text{K}} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

7. A beach ball is submerged by a diver. The season is winter and the water is cold! The original volume at 101 kPa is 25.8 L, and the air temperature is 23 °C. Total external pressure exerted on the ball 25 m underwater is 355 kPa. Water temperature at 25 m depth is 12 °C. What is the new volume? (7.1 L)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{\text{K}} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

8. The volume of a balloon is 340. mL at a pressure of 142 kPa and a temperature of 25 °C. Calculate the new volume if the temperature is raised to 85 °C and the pressure changes to 182 kPa. (320 mL)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{\text{K}} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

9. The volume of a mass of gas is 4.23 L at 747 mm and 24 °C. What volume will it occupy at 700 mm and 24 °C? (4.51 L)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{\text{K}} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

10. The volume of a given mass of gas is 410 mL at 33.0 °C and 467 mm. What will its volume be if it is measured at 10.0 °C and 467 mm? (379 mL)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{\text{K}} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

11. The volume of a sample of a gas is 800. mL at 1.0 atm and 0 °C. What volume will it occupy at 55 °C and 790 mm? (925 mL)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{T_2} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

12. The volume of mass of gas is 300 mL at 25 °C and 685 mm. What volume will the gas occupy at 1.00 atm and 0 °C? (248 mL)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{T_2} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$

13. A sample of a gas occupies 300 mL at -10 °C and 720 mm. What pressure will the gas exert in a 505 mL sealed bulb at 25 °C C? (485 mm Hg)

$$P_1 =$$

$$V_1 =$$

$$\frac{T_1}{T_2} =$$

$$P_2 =$$

$$V_2 =$$

$$T_2 =$$