9. Nitrous oxide (N_2O) is used as an anesthetic. The pressure on 2.50 L of N_2O changes from 105 kPa to 40.5 kPa. If the temperature does not change, what will the new volume be?

10. A gas with a volume of 4.00 L at a pressure of 205 kPa is allowed to expand to a volume of 12.0 L. What is the pressure in the container if the temperature remains constant?

11. If a sample of gas occupies 6.80 L at 325^0C, what will its volume be at 25^0C if the pressure does not change?

12. Exactly 5.00 L of air at -50.0^0C is warmed to 100.0^0C. What is the new volume if the pressure remains constant?

13. The pressure in a sealed plastic container is 108 kPa at 41^0C. What is the pressure when the temperature drops to 22^0C? Assume that the volume has not changed.

14. The pressure in a car tire is 198 kPa at 27^0C. After a long drive, the pressure is 225 kPa. What is the temperature of the air in the tire? Assume that the volume is constant.

15. A gas at 155 kPa and 25^0C has an initial volume of 1.00 L. The pressure of the gas increases to 605 kPa as the temperature is raised to 125^0C. What is the new volume?

16. A 5.00-L air sample has a pressure of 107 kPa at a temperature of -50.0^0C. If the temperature is raised to 102^0C and the volume expands to 7.00 L, what will the new pressure be?

22. A given mass of air has a volume of 6.00 L at 101 kPa. What volume will it occupy at 25.0 kPa if the temperature does not change?

50.   A metal cylinder contains 1 mol of nitrogen gas. What will happen to the pressure (by what factor will it increase or decrease) if another mole of gas is added to the cylinder, but the temperature and volume do not change?

51. If a gas is compressed from 4 L to 1 L and the temperature remains constant, what happens (by what factor will it increase or decrease) to the pressure?

52. Why does gas pressure decrease when gas is removed from a container with a fixed volume?

53. Write the mathematical equation for Charles's law and explain the symbols.

54. The gas in a closed container has a pressure of 3.00×10^2 kPa at 30^0C (303 K). What will the pressure be if the temperature is lowered to -172^0C (101 K)?

55. Calculate the volume of a gas (in L) at a pressure of 1.00×10^2 kPa if its volume at 1.20×10^2 kPa is 1.50×10^3 mL.

56. A gas with a volume of 4.0 L at 90.0 kPa expands until the pressure drops to 20.0 kPa. What is its new volume if the temperature doesn't change?

57. A gas with a volume of 3.00×10^2 mL at 150.0^0C is heated until its volume expands to 6.00×10^2 mL. What is the new temperature of the gas if the pressure remains constant during the heating process?

58. A gas with a volume of 15 L at 327^0C is cooled at constant pressure until the volume reaches 5 L. What is the new temperature of the gas?

60. A sealed cylinder of gas contains nitrogen gas at 1.00 X 10^3kPa pressure and a temperature of 20^0C. When the cylinder is left in the sun, the temperature increases to 50^0C. What is the new pressure in the cylinder?

61. A sample of nitrogen gas has a pressure of 6.58 kPa at 539 K. If the volume does not change, what will the pressure be at 211 K?