

Name:
Period:

Date:
Worksheet: Combined Gas Law

1 A gas has a volume of 800.0 mL at minus 23.00 °C and 300.0 torr. What would the volume of the gas be at 227.0 °C and 600.0 torr of pressure?

2 500.0 liters of a gas are prepared at 700.0 mm Hg and 200.0 °C. The gas is placed into a tank under high pressure. When the tank cools to 20.0 °C, the pressure of the gas is 30.0 atm. What is the volume of the gas?

3 What is the final volume of a 400.0 mL gas sample that is subjected to a temperature change from 22.0 °C to 30.0 °C and a pressure change from 760.0 mm Hg to 360.0 mm Hg?

4 What is the volume of gas at 2.00 atm and 200.0 K if its original volume was 300.0 L at 0.250 atm and 400.0 K.

5 At conditions of 785.0 torr of pressure and 15.0 °C temperature, a gas occupies a volume of 45.5 mL. What will be the volume of the same gas at 745.0 torr and 30.0 °C?

6 A gas occupies a volume of 34.2 mL at a temperature of 15.0 °C and a pressure of 800.0 torr. What will be the volume of this gas at standard conditions?

7. The volume of a gas originally at standard temperature and pressure was recorded as 488.8 mL. What volume would the same gas occupy when subjected to a pressure of 100.0 atm and temperature of minus 245.0 °C?

8. At a pressure of 780.0 mm Hg and 24.2 °C, a certain gas has a volume of 350.0 mL. What will be the volume of this gas under STP

9. A gas sample occupies 3.25 liters at 24.5 °C and 1825 mm Hg. Determine the temperature at which the gas will occupy 4250 mL at 1.50 atm.

10. If 10.0 liters of oxygen at STP are heated to 512 °C, what will be the new volume of gas if the pressure is also increased to 1520.0 mm of mercury?

11. What is the volume at STP of 720.0 mL of a gas collected at 20.0 °C and 3.00 atm pressure?

12. 2.00 liters of hydrogen, originally at 25.0 °C and 750.0 mm of mercury, are heated until a volume of 20.0 liters and a pressure of 3.50 atmospheres is reached. What is the new temperature?