

Name:  
Period:

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Gay-Lussac's Law

1. Determine the pressure change when a constant volume of gas at 1.00 atm is heated from 20.0 °C to 30.0 °C.
2. A gas has a pressure of 0.370 atm at 50.0 °C. What is the pressure at standard temperature?
3. A gas has a pressure of 699.0 mm Hg at 40.0 °C. What is the temperature at standard pressure?
4. If a gas is cooled from 323.0 K to 273.15 K and the volume is kept constant what final pressure would result if the original pressure was 750.0 mm Hg?
5. If a gas in a closed container is pressurized from 15.0 atmospheres to 16.0 atmospheres and its original temperature was 25.0 °C, what would the final temperature of the gas be?
6. A 30.0 L sample of nitrogen inside a rigid, metal container at 20.0 °C is placed inside an oven whose temperature is 50.0 °C. The pressure inside the container at 20.0 °C was at 3.00 atm. What is the pressure of the nitrogen after its temperature is increased?
7. A sample of gas at  $3.00 \times 10^3$  mm Hg inside a steel tank is cooled from 500.0 °C to 0.00 °C. What is the final pressure of the gas in the steel tank?
8. The temperature of a sample of gas in a steel container at 30.0 kPa is increased from -100.0 °C to  $1.00 \times 10^3$  °C. What is the final pressure inside the tank?
9. Calculate the final pressure inside a scuba tank after it cools from  $1.00 \times 10^3$  °C to 25.0 °C. The initial pressure in the tank is 130.0 atm.