

Name: _____ Date: _____ Period: _____

Gas Laws Worksheet 2

Directions: Complete all three problems and identify the correct gas law. Credit will only be awarded for work that is shown. Partial credit will be awarded where appropriate.

1. Calculate the decrease in temperature when 6.00 L at 20.0 °C is compressed to 4.00 L. You MUST convert Celsius to Kelvin before solving this problem!

Work	Identify the Law (Mark box) <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles' Law <input type="checkbox"/> Gay-Lussac's Law
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2. If 22.5 L of nitrogen at 748 mm Hg are compressed to 725 mm Hg at constant temperature. What is the new volume? (Use the pressure unit of mm Hg. Do not convert the pressure unit to atmospheres.)

Work	Identify the Law (Mark box) <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles' Law <input type="checkbox"/> Gay-Lussac's Law
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3. A gas with a volume of 4.0L at a pressure of 205kPa is allowed to expand to a volume of 12.0L. What is the pressure in kPa in the container if the temperature remains constant?

Work	Identify the Law (Mark box) <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles' Law <input type="checkbox"/> Gay-Lussac's Law
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4. What pressure is required to compress 196.0 liters of air at 1.00 atmosphere into a cylinder whose volume is 2,600 milliliters? Make sure you convert milliliters to liters BEFORE starting this problem.

Work	Identify the Law (Mark box) <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles' Law <input type="checkbox"/> Gay-Lussac's Law
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5. A container of gas is initially at 0.500 atm and 25 °C. What will the pressure be at 125 °C? You must convert °C to K.

Work	Identify the Law (Mark box) <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles' Law <input type="checkbox"/> Gay-Lussac's Law
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6. A container containing 5.00L of a gas is collected at 100K and then allowed to expand to 20.0L. What must the new temperature be in order to maintain the same pressure?

Work	Identify the Law (Mark box) <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles' Law <input type="checkbox"/> Gay-Lussac's Law
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6. If 15.0 liters of neon at 25.0 °C is allowed to expand to 45.0 liters, what must the new temperature be to maintain constant pressure? You MUST convert Celsius to Kelvin before solving this problem!

Work	Identify the Law (Mark box) <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles' Law <input type="checkbox"/> Gay-Lussac's Law
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8. A gas container is initially at 47 mm Hg and 77 K (liquid nitrogen temperature.) What will the pressure be in mm Hg when the container warms up to room temperature of 25°C? You must convert Celsius to Kelvin before you start.

Work	Identify the Law (Mark box) <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles' Law <input type="checkbox"/> Gay-Lussac's Law
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9. A gas thermometer measures temperature by measuring the pressure of a gas inside the fixed volume container. A thermometer reads a pressure of 248 kPa at 273°C. What is the temperature when the thermometer reads a pressure of 3.41 atm? You must convert 248 kPa to atm and you must convert Celsius to Kelvin before solving this problem.

Work	Identify the Law (Mark box) <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles' Law <input type="checkbox"/> Gay-Lussac's Law
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*This assignment is due at the start of NEXT class. I prefer you to turn it in by the end of this class.

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