NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE DUE: \_\_\_\_\_\_\_\_\_\_\_\_

TEACHER: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**/22**

**Year 11 Term 4 – Gases HOMEWORK SHEET No. 2**

**Success Criteria 10,11, and 13**

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|  | | **1. In three concise sentences describe the contribution of Jacques Charles to the scientific study of gas behaviour.** |
| /2 | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| /2 | | **2. Describe Charles’s law using only words.** |
| /1 | | **3. Convert the following temperatures to K**.  a) 321 0C  b) -0.034 0C |
| /2 | | **4. A volume of 8.98 dm3 of hydrogen gas is collected at 38.8 °C. Find the volume the gas will occupy at -39.9 °C if the pressure remains constant.** |
| /3 | **5. Convert the following values to the units indicated in the brackets.**  **a)** 1.023 atmospheres (to kPa)  **b)**  450 K (to 0C)  **c)** 0.92 atm (to Pa)  **d)** 0.143 m3 (to L)  **e)** 32 400 000 mL (to L)  **f)**  0.025 L (to mL) | |

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| /2 | **6. a) If you over-inflate a pool float on a hot day, it can swell in the sun and burst.** Use your knowledge of Charles law to argue why this is possible. |
| /2 | **7. A balloon has a volume of 2500.0 mL on a day when the temperature is 30.0 °C. If the temperature at night falls to 10.0 °C, what will be the volume of the balloon if the pressure remains constant?** |
| /2 | **8. Write the formula which describes the combined gas law relationship. What condition must be kept constant for this relationship to be valid?** |
| /3 | **9. Find the volume of a gas at STP when 2.00 litres is collected at 745.0 mm Hg and 25.0 °C.** |
| /3 | **10. A volume of 1.23 L of a gas occupies a container that has a temperature of 28°C and a pressure of 788 mmHg. What is the temperature if the volume is reduced to 50 mL at 95 kPa.** |