

## Gay-Lussac's Law Worksheet

$$\textcircled{1} \quad 30^{\circ}\text{C} + 273 = 303\text{K}$$

$$\frac{P_1}{T_1} = \frac{P_2}{T_2}$$

$$\frac{125\text{ kPa}}{303\text{K}} = \frac{201\text{ kPa}}{T_2}$$

$$T = \underline{487\text{ K or } 214^{\circ}\text{C}}$$

$$\textcircled{2} \quad 25^{\circ}\text{C} + 273 = 298\text{K}$$

$$37^{\circ}\text{C} + 273 = 310\text{K}$$

$$\frac{P_1}{T_1} = \frac{P_2}{T_2}$$

$$\frac{1.88\text{ atm}}{298\text{K}} = \frac{P_2}{310\text{K}}$$

$$P = \underline{1.96\text{ atm}}$$

$$\textcircled{3} \quad 36.5^{\circ}\text{C} + 273 = 309.5\text{K}$$

$$\frac{P_1}{T_1} = \frac{P_2}{T_2}$$

$$\frac{1.12\text{ atm}}{T_1} = \frac{2.56\text{ atm}}{309.5\text{K}}$$

$$T_1 = \underline{135\text{ K}}$$

$$(4) \quad 0^{\circ}\text{C} + 273 = 273 \text{ K}$$

$$\frac{P_1}{T_1} = \frac{P_2}{T_2}$$

$$\frac{30.7 \text{ kPa}}{273 \text{ K}} = \frac{28.4 \text{ kPa}}{T_2}$$

$$T = \underline{253 \text{ K} \text{ or } -20.5^{\circ}\text{C}}$$

$$(5) \quad 22.0^{\circ}\text{C} + 273 = 295 \text{ K}$$

$$44.6^{\circ}\text{C} + 273 = 317.6 \text{ K}$$

$$\frac{P_1}{T_1} = \frac{P_2}{T_2}$$

$$\frac{0.9 \text{ atm}}{295 \text{ K}} = \frac{P_2}{317.6 \text{ K}}$$

$$P = \underline{0.97 \text{ atm}}$$