

Gas Laws Review

$$\textcircled{1} \quad P_1 V_1 = P_2 V_2$$
$$(1.00 \text{ atm})^2 (2.0 \text{ L}) = (6.00 \times 10^4 \text{ atm}) V$$

$$\underline{V = 3.3 \times 10^{-5} \text{ L}}$$

$$\textcircled{2} \quad P_1 V_1 = P_2 V_2$$
$$(1.2 \text{ atm}) (15000 \text{ L}) = (250 \text{ atm}) V_2$$

$$\underline{V = 90 \text{ L}}$$

$$\textcircled{3} \quad \frac{V_1}{T_1} = \frac{V_2}{T_2}$$
$$\frac{0.5 \text{ L}}{295 \text{ K}} = \frac{V}{277 \text{ K}}$$

$$4^\circ \text{C} = 277 \text{ K}$$
$$22^\circ \text{C} = 295 \text{ K}$$

$$\underline{V = 0.47 \text{ L}}$$

$$\textcircled{4} \quad \frac{V_1}{T_1} = \frac{V_2}{T_2}$$
$$\frac{2 \text{ L}}{293 \text{ K}} = \frac{V}{269 \text{ K}}$$

$$20^\circ \text{C} = 293 \text{ K}$$
$$-4^\circ \text{C} = 269 \text{ K}$$

$$\underline{V = 1.84 \text{ L}}$$

$$\textcircled{5} \quad \frac{P_1}{T_1} = \frac{P_2}{T_2}$$
$$\frac{103 \text{ kPa}}{298 \text{ K}} = \frac{P}{1201 \text{ K}}$$

$$25^\circ \text{C} = 298 \text{ K}$$
$$928^\circ \text{C} = 1201 \text{ K}$$

$$\underline{P = 415 \text{ kPa}}$$

$$\textcircled{6} \quad \frac{P_1}{T_1} = \frac{P_2}{T_2}$$
$$\frac{3 \text{ atm}}{293 \text{ K}} = \frac{P}{323 \text{ K}}$$

$$20^\circ\text{C} = 293 \text{ K}$$
$$50^\circ\text{C} = 323 \text{ K}$$

$$\underline{P = 3.3 \text{ atm}}$$

$$\textcircled{7} \quad \frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

$$45^\circ\text{C} = 318 \text{ K}$$
$$35^\circ\text{C} = 308 \text{ K}$$

$$\frac{P(28 \text{ L})}{318 \text{ K}} = \frac{(2.0 \text{ atm})(34 \text{ L})}{308 \text{ K}}$$

$$\underline{P = 2.5 \text{ atm}}$$

$$\textcircled{8} \quad \frac{V_1}{T_1} = \frac{V_2}{T_2}$$

$$14^\circ\text{C} = 287 \text{ K}$$
$$29^\circ\text{C} = 302 \text{ K}$$

$$\frac{4.5 \text{ L}}{287 \text{ K}} = \frac{V}{302 \text{ K}}$$

$$\underline{V = 4.7 \text{ L}}$$