

Mixed Gas Law Worksheet **answers**(modified 3/18/10)

Name: _____ (show your work)

period: _____

Convert:

$$100 \text{ mmHg} = \underline{13.3} \text{ kPa}$$

$$300 \text{ mmHg} = \underline{.395} \text{ atm}$$

$$120 \text{ atm} = \underline{91200} \text{ mmHg}$$

$$300 \text{ torr} = \underline{39.99} \text{ kPa}$$

$$25 \text{ kPa} = \underline{187.5} \text{ mmHg}$$

$$25 \text{ mmHg} = \underline{.033} \text{ atm}$$

$$300^\circ\text{C} = \underline{573} \text{ K}$$

$$150\text{K} = \underline{-123}^\circ\text{C}$$

$$5000^\circ\text{C} = \underline{5273} \text{ K}$$

$$300\text{K} = \underline{27}^\circ\text{C}$$

$$-255^\circ\text{C} = \underline{18} \text{ K}$$

$$3500\text{K} = \underline{3227}^\circ\text{C}$$

$$200^\circ\text{C} = \underline{392}^\circ\text{F}$$

$$95^\circ\text{F} = \underline{35}^\circ\text{C} = \underline{308} \text{ K}$$

$$45^\circ\text{F} = \underline{7.2}^\circ\text{C} = \underline{280.2} \text{ K}$$

- 1) A 70. liter sample of gas initially at 280°C is allowed to cool at constant pressure, what will the new volume be at 0°C ?

$$P_1 = \quad P_2 =$$

$$V_1 = \quad V_2 =$$

$$\underline{34.6 \text{ L}}$$

$$T_1 = \quad T_2 =$$

- 2) A 4.0 liter sample of gas initially at 25°C is allowed to cool at constant pressure, what will the new volume be at -5°C ?

$$P_1 = \quad P_2 =$$

$$V_1 = \quad V_2 =$$

$$\underline{3.6 \text{ L}}$$

$$T_1 = \quad T_2 =$$

- 3) A buoyancy vest (used in scuba diving) is filled to a volume of 2.3 liters at a pressure of 1 atmosphere (at the surface where the temperature is a balmy 300K), what will the volume of air be in the vest when the diver dives to a depth of about 90 feet where the temperature is 17°C and the pressure is 4 atmospheres?

$$P_1 = \quad P_2 =$$

$$V_1 = \quad V_2 =$$

$$\underline{.56 \text{ L}}$$

$$T_1 = \quad T_2 =$$