

Key: Gas Laws: Boyle's & Charles' Laws

1. 4.73 atm
2. 4.49 L

KEY

1.)  $P_1 = 1.30 \text{ atm}$   
 $T_1 = 224 \text{ K}$   
 $P_2 = ?$   
 $T_2 = 815 \text{ K}$

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

$$P_2 = \frac{(1.30 \text{ atm})(815 \text{ K})}{224 \text{ K}}$$

$$P_2 = 4.73 \text{ atm}$$

2.)  $P_1 = 101.3 \text{ kPa}$   
 $V_1 = 4.75 \text{ L}$   
 $T_1 = 273 \text{ K}$   
 $P_2 = 210. \text{ kPa}$   
 $V_2 = ?$   
 $T_2 = 535 \text{ K}$

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

$$V_2 = \frac{(101.3 \text{ kPa})(4.75 \text{ L})(535 \text{ K})}{(210. \text{ kPa})(273 \text{ K})}$$

$$V_2 = 4.49 \text{ L}$$