#5

$V_1 = 1.7 \times 10^{-4}\ L$

$P_1 = 2.3\ atm$

$T_1 = 25.8^\circ C + 273 = 298.8\ K = 299\ K$

$T_2 = 350\ K$

$P_2 = \frac{152\ kPa}{} \left| \frac{1\ atm}{101.3\ kPa} \right. = 1.50\ atm$

$V_2 = ?\ L$

$\frac{PV}{T} = \frac{nRT}{T}$

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

$$\frac{350.\ K \times 2.3\ atm \times 1.7 \times 10^{-4}\ L}{298.8\ K \times 1.50\ atm} =$$

$3.1 \times 10^{-4}\ L$

#6

$V = ?\ L$

$n = 0.425$ moles (this means your using $PV = nRT$)

$P = 0.721\ atm$

$T = 37°C + 273 = 310K$

$R = \frac{0.0821\ L \cdot atm}{mole \cdot K}$

$\frac{PV}{P} = \frac{nRT}{P} = \frac{0.425\ mole \times 0.0821\ L \cdot atm \times 310K}{mole \cdot K \quad 0.721\ atm}$

$= 15L$

#7

$P_1 = 0.0370\ atm$

$T_1 = 50.0°C + 273 = 323K$

$P_2 = ?$

$T_2 = \text{standard temp} = 0°C + 273 = 273K$

$\frac{PV}{T} = \frac{nRT}{T}$ $\qquad$ $\frac{T_2 P_1}{T_1} = \frac{P_2 \cdot T_2}{T_2}$

$$\frac{273K \times 0.0370atm}{323K}$$

$$= 3.13 \times 10^{-2}\ atm$$

#8

$P_1 = 12\,atm$

$V_1 = 23\,L$

$T_1 = 200.K$

$P_2 = 14\,atm$

$T_2 = 300.K$

$V_2 = ?$

$$\frac{PV}{T} = \frac{nRT}{T}$$

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

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

$$\frac{300.K \times 12\,atm \times 23\,L}{200.K \times 14\,atm} = 30.\,L$$

#9

$V_1 = 1.00\ L$

T_1 = Stand. temp $= 273K$

$V_2 = ?$

T_2 $333.0°C + 273 = 606K$

$\frac{PV}{T} = \frac{nRT}{T}$ $\quad \frac{T_2 V_1}{T_1} = \frac{V_2}{T_2} \cdot T_2$

$$\frac{606K \times 1.00L}{273K} = 2.22\ L$$

#10

$n = ?$ moles (use $PV = nRT$ b/c of moles)

$V = 1.25\,L\ O_2$

$P = \dfrac{805.6\ mmHg \mid 1\ atm}{760.\ mmHg} = 1.060\ atm$

$T = 250.\ K$

$R = \dfrac{0.0821\ L \cdot atm}{mole \cdot K}$

$\dfrac{PV}{RT} = \dfrac{nRT}{RT}$ $\qquad n = \dfrac{PV}{RT}$

$$\frac{1.060\ atm \times 1.25\ L}{250.\ K \times 0.0821\ \frac{L \cdot atm}{mole \cdot K}} = 0.0646\ moles$$

this is R don't forget to flip bottom unit up.