Unit #8 Practice Blackboard Insert

1. **(2 pt)** A gas has a volume of 5.85 L at a pressure of 525.0 mm Hg. What is the volume of the gas if the pressure is increased to 730.0 mm Hg? The temperature remains constant.

	Pressure (mm Hg)	Volume (L)	Temperature ^{o}C	+ 273➔	Temperature K
Initial	525.0	5.85	-		-
Final	730.0	?	-		-

(525.0 mmHg) (5.85 L)   = 730 mmHg (V)

V = 4.21 L

2. **(2 pt)** A sample of gas has a volume of 375.0 mL at 55.0 °C. What is the volume of the gas if the temperature is decreased to 25.0 °C? The pressure remains constant.

	Pressure (mm Hg)	Volume (mL)	Temperature ^{o}C	+ 273➔	Temperature K
Initial	-	375.0	55.0		328
Final	-	?	25.0		298

$\dfrac{375 \text{ mL}}{328 \text{ K}}$ = $\dfrac{V}{298 \text{ K}}$

V = 341 mL

3. **(3 pt)** A sample of gas at STP is heated to 35.0 °C. If the volume remains constant, what will the new pressure (in Torr) be?

	Pressure (Torr)	Volume (L)	Temperature ^{o}C	+ 273➔	Temperature K
Initial	760	-	0		273
Final	?	-	35.0		308

$\dfrac{760 \text{ Torr}}{273 \text{ K}}$ = $\dfrac{P}{308 \text{ K}}$

P = 857 Torr

4. **(3 pt)** 3.65 L of a gas has a pressure of 1.25 ata* at 45.0 °C. What is the pressure if the volume increases to 6.85 L and the temperature decreases to 32.0 °C? (* ata = absolute atmospheres)

	Pressure (ata)	Volume (L)	Temperature ^{o}C	+ 273➔	Temperature K
Initial	1.25	3.65	45.0		318
Final	?	6.85	32.0		305

$\dfrac{(1.25 \text{ ata}) (3.65 \text{ L})}{318 \text{ K}}$ = $\dfrac{P (6.85 \text{ L})}{305 \text{ K}}$

P = 0.639 ata

Extra Credit (1 pt):

Convert name to formula or visa versa … from the list of names in unit 5