

EJERCICIOS...

- a cylinder of argon gas contains 50L of Ar at 18.4atm and 27 degrees Celsius . how many moles of argon are in the cylinder?
- A 283.3 sample of $x_2(g)$ has a volume of 30L at 27 degrees Celsius. What is element x?
- An ideal gas sample is confined to 3L and kept at 27 degrees Celsius. If the temperature is raised to 77 degrees Celsius and the initial pressure was 1500mm hg what is the final temperature?
- A sample of helium was compressed at 35 degrees Celsius from a volume of 0.5L to 0.25L where the pressure is 500mm hg. What was the original pressure?
- Air is basically a 80-90 mix of nitrogen and oxygen. A 2 mol sample of air is found to occupy 6L at 27 degrees Celsius. What is the partial pressure of oxygen in the sample?

Gas law formulas.

$$(p_1)(v_1) = (p_2)(v_2)$$

$$V_1/t_1 = v_2/t_2$$

$$P_1/t_1 = p_2/t_2$$

$$(p_1)(v_1)/t_1 = (p_2)(v_2)/t_2$$

$$Pv=nRT$$

N=number of moles

$$R=0.08206\text{L}\cdot\text{atm}/\text{mol}\cdot\text{K}$$

P=pressure

T=temperature

V=volume

- If you solve for N in the equation $PV = nRT$

$$\text{Then } N = PV / RT = (18.4 \text{ atm})(50\text{L}) / (0.08206)(273\text{K}) = 412.52 \text{ moles /K}$$

2)