

Nov. 6

PURPOSE: How Do we  
Solve "NOW" Problems?

WARMUP: Rearrange to  
isolate the circled letter:

$\frac{PV}{RT} = \frac{\textcircled{n}}{\cancel{RT}}$ $\frac{PV}{RT} = n$	$\frac{\textcircled{PV} = nRT}{\cancel{V} \quad \cancel{V}}$ $P = \frac{nRT}{V}$
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P is pressure

V is volume

R is a constant ( $0.0821 \frac{\text{L} \cdot \text{atm}}{\text{mol} \cdot \text{K}}$ )

T is temperature always in Kelvins

n is number of molecules in  
moles

"the ideal gas law" is  $PV = nRT$

There are two kinds of gas problems:

① before-and-after

33L of gas at 125K is heated to 300K. Find the volume.

$$33L \times \left( \frac{300K}{125K} \right) = 79L$$

② "now" problems

If a gas bubble is 0.25 liters, 290 Kelvins, 1.5 atm, find the number of moles.

$$PV = nRT$$

$$\frac{PV}{RT} = n$$

$$\frac{(1.5 \text{ atm})(0.25L)}{(0.0821)(290K)} = n$$

$$\frac{(1.5 \text{ atm})(0.25L)}{(0.0821)(290K)} = n$$

$$0.016 = n$$

moles

By the bell, solve these

p. 356

51, 57, 63 a, b, c

Get a stamp when done.