Answer on Question #72385 - Chemistry - Physical Chemistry

Question:

A 2500 m^3 confined gas is at a temperature of 35℃ and pressure of 75.33 cm Hg. If the pressure is increased to 76.3 cm Hg with a final temperature of 78℃, what is the final volume?

Solution:

$PV = nRT$

$P_1V_1/T_1 = P_2V_2/T_2$

$V_2 = P_1V_1T_2/(T_1P_2) = 75.33 \cdot 2500 \cdot 351/(308 \cdot 76.3) = 2812.8$ (m^3)

Answer: the final volume is 2813 m^3