Answer on Question 81801 in General Chemistry

2 $C_4\ H_{10}$(g) +13 $O_2(g)$ = 8C$O_2(g)$+10 H_2O(l)

. p =1 atm

.t=23^o C=296 K

.m (C_4H_{10}) =1.6 g

V(CO_2) =?

Find the amount of substance of $C_4\ H_{10}$

.n = $\frac{m}{Mr}$ = $\frac{1.6}{58}$=0.028 mol

Mr ($C_4\ H_{10}$) =4Ar(C) +10 Ar (H) =4×12 +10×1=58

.n(CO_2)=4 n($C_4\ H_{10}$)=4× 0.028=0.112 mol

V(CO_2)= n× V_M=0.112×22.4=2.5 l

The volume is at temperature 25^o C=298 K

Recalculate the volume of the law Gay Lussac

$\frac{V_0}{T_0}$ = $\frac{V_1}{T_1}$ from which V_1=$\frac{V_0 \times T_1}{T_0}$ = $\frac{2.5 \times 296}{298}$=2.48 l