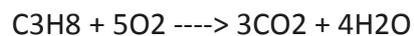


Answer on question #43169, Chemistry, Physical Chemistry

Question:



If 5 L of C_3H_8 reacts, what volume of CO_2 could be produced?

- a) 5/3 L
- b) 1 L
- c) 15 L
- d) 45 L

Answer:

From the equation we see that $n(\text{C}_3\text{H}_8)/n(\text{CO}_2) = 1/3$

All these gases are under standard condition, so $V_m = 22.4\text{L}$

So, $n(\text{C}_3\text{H}_8) = 5\text{L}/22.4\text{L} = 0.223\text{ mol}$

Then $n(\text{CO}_2) = 0.223 \times 3 = 0.669\text{ mol}$

$V(\text{CO}_2) = 0.669 \times 22.4\text{L} = 15\text{L}$

So, an answer is c.