

Question#18442

For the following combustion, what mass of carbon dioxide is produced when 1500 kJ of energy is released?



Solution:

Find molar mass of  $\text{CO}_2$ :  $M(\text{CO}_2) = M(\text{C}) + 2 * M(\text{O}) = 12 + 2 * 16 = 44 \text{ g/mol}$

According to equation:

$$4 \text{ mol } (\text{CO}_2) = 4 * 44 \text{ g} \Rightarrow 2502 \text{ KJ}$$

$$x \text{ mol}(\text{CO}_2) = x \text{ g} \Rightarrow 1500 \text{ KJ}$$

$$x = \frac{4 * 44 * 1500}{2502} = 105.5156 \text{ g}$$

**Answer:  $\approx 105.52 \text{ g}$**