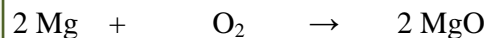


STOICHIOMETRY (MASS, MOLAR MASS)

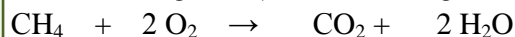
Question One: 36.2g of Magnesium completely combusts with excess oxygen. What mass of Magnesium oxide will be produced?

$$M(\text{Mg}) = 24.1 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



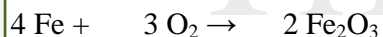
Question Two: 7.31g of methane completely combusts with excess oxygen. What mass of water will be produced?

$$M(\text{C}) = 12.0 \text{ g mol}^{-1}, M(\text{H}) = 1.00 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



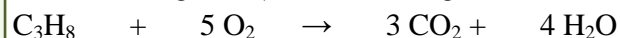
Question Three: 37.6g of iron metal is completely oxidised with oxygen. What mass of iron (III) oxide will be produced?

$$M(\text{Fe}) = 55.9 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



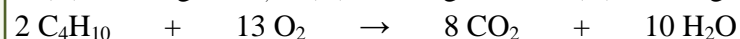
Question Four: 17.3g of propane is completely combusted. What mass of carbon dioxide will be produced?

$$M(\text{C}) = 12.0 \text{ g mol}^{-1}, M(\text{H}) = 1.00 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



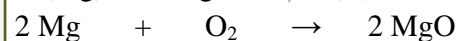
Question Five: 7.13g of butane is completely combusted. What mass of water will be produced?

$$M(\text{C}) = 12.0 \text{ g mol}^{-1}, M(\text{H}) = 1.00 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



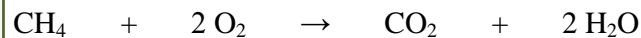
Question Six: How many grams of oxygen was required to produce 12.2 g of magnesium oxide?

$$M(\text{Mg}) = 24.1 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



Question Seven: Methane completely combusted with 5.4g of oxygen. What mass of water will be produced?

$$M(\text{C}) = 12.0 \text{ g mol}^{-1}, M(\text{H}) = 1.00 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



Question Eight: Iron (III) Oxide was produced from 12.4g of oxygen gas; what was the minimum mass of iron metal needed?

$$M(\text{Fe}) = 55.9 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



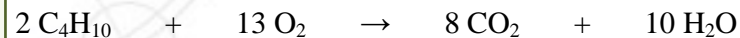
Question Nine: Propane was completely combusted. 11.0g of carbon dioxide was produced. What mass of water was produced?

$$M(\text{C}) = 12.0 \text{ g mol}^{-1}, M(\text{H}) = 1.00 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



Question Ten: 1.00g of butane is completely combusted. What mass of oxygen was needed?

$$M(\text{C}) = 12.0 \text{ g mol}^{-1}, M(\text{H}) = 1.00 \text{ g mol}^{-1}, M(\text{O}) = 16.0 \text{ g mol}^{-1}$$



ANSWERS

Q1	$n(\text{Mg})=1.50 \text{ mol}$	$n(\text{MgO})=1.50 \text{ mol}$	$m(\text{MgO})=60.2 \text{ g}$
Q2	$n(\text{CH}_4)=0.457 \text{ mol}$	$n(\text{H}_2\text{O})=0.914 \text{ mol}$	$m(\text{H}_2\text{O})=16.4 \text{ g}$
Q3	$n(\text{Fe})=0.673 \text{ mol}$	$n(\text{Fe}_2\text{O}_3)=0.336 \text{ mol}$	$m(\text{Fe}_2\text{O}_3)=53.7 \text{ g}$
Q4	$n(\text{C}_3\text{H}_8)=0.393 \text{ mol}$	$n(\text{CO}_2)=1.18 \text{ mol}$	$m(\text{CO}_2)=51.9 \text{ g}$
Q5	$n(\text{C}_4\text{H}_{10})=0.123 \text{ mol}$	$n(\text{H}_2\text{O})=0.615 \text{ mol}$	$m(\text{H}_2\text{O})=11.1 \text{ g}$
Q6	$n(\text{MgO})=0.304 \text{ mol}$	$n(\text{O}_2)=0.152 \text{ mol}$	$m(\text{O}_2)=4.87 \text{ g}$
Q7	$n(\text{O}_2)=0.169 \text{ mol}$	$n(\text{H}_2\text{O})=0.169 \text{ mol}$	$m(\text{H}_2\text{O})=3.04 \text{ g}$
Q8	$n(\text{O}_2)=0.388 \text{ mol}$	$n(\text{Fe})=0.517 \text{ mol}$	$m(\text{Fe})=28.9 \text{ g}$
Q9	$n(\text{CO}_2)=0.250 \text{ mol}$	$n(\text{H}_2\text{O})=0.333 \text{ mol}$	$m(\text{H}_2\text{O})=6.00 \text{ g}$
Q10	$n(\text{C}_4\text{H}_{10})=0.0172 \text{ mol}$	$n(\text{O}_2)=0.112 \text{ mol}$	$m(\text{O}_2)=3.59 \text{ g}$