

PRACTICE Celebration REACTIONS ANSWERS

For each of these 10 reactions BALANCE THEM where possible, write in the phase symbols, and write the type of reaction it is.

$\text{N}_2\text{O}_{3(\text{G})} \rightarrow \text{N}_{2(\text{G})} + \text{O}_{2(\text{G})}$ $2\text{N}_2\text{O}_{3(\text{G})} \rightarrow 2\text{N}_{2(\text{G})} + 3\text{O}_{2(\text{G})}$ <p style="text-align: center;">decomposition</p>	$\text{Mg}_{(\text{S})} + \text{O}_{2(\text{G})} \rightarrow \text{MgO}_{(\text{S})}$ $2\text{Mg}_{(\text{S})} + \text{O}_{2(\text{G})} \rightarrow 2\text{MgO}_{(\text{S})}$ <p style="text-align: center;">synthesis</p>
$\text{C}_4\text{H}_{8(\text{G})} + \text{O}_{2(\text{G})} \rightarrow \text{CO}_{2(\text{G})} + \text{H}_2\text{O}_{(\text{G})}$ $\text{C}_4\text{H}_{8(\text{G})} + 6\text{O}_{2(\text{G})} \rightarrow 4\text{CO}_{2(\text{G})} + 4\text{H}_2\text{O}_{(\text{G})}$ <p style="text-align: center;">combustion</p>	$\text{Fe}_{(\text{S})} + \text{HCl}_{(\text{AQ})} \rightarrow \text{FeCl}_{3(\text{AQ})} + \text{H}_{2(\text{G})}$ $2\text{Fe}_{(\text{S})} + 6\text{HCl}_{(\text{AQ})} \rightarrow 2\text{FeCl}_{3(\text{AQ})} + 3\text{H}_{2(\text{G})}$ <p style="text-align: center;">single replacement</p>
$\text{H}_2\text{O}_{2(\text{L})} \rightarrow \text{H}_2\text{O}_{(\text{L})} + \text{O}_{2(\text{G})}$ $2\text{H}_2\text{O}_{2(\text{L})} \rightarrow 2\text{H}_2\text{O}_{(\text{L})} + \text{O}_{2(\text{G})}$ <p style="text-align: center;">decomposition</p>	$\text{C}_6\text{H}_{12}\text{O}_{6(\text{S})} + \text{O}_{2(\text{G})} \rightarrow \text{CO}_{2(\text{G})} + \text{H}_2\text{O}_{(\text{G})}$ $\text{C}_6\text{H}_{12}\text{O}_{6(\text{S})} + 6\text{O}_{2(\text{G})} \rightarrow 6\text{CO}_{2(\text{G})} + 6\text{H}_2\text{O}_{(\text{G})}$ <p style="text-align: center;">combustion</p>
$\text{Ca}(\text{NO}_3)_{2(\text{AQ})} + (\text{NH}_4)_2\text{SO}_{4(\text{AQ})} \rightarrow \text{CaSO}_4 + \text{NH}_4\text{NO}_3 \quad (\text{switched, not fixed})$ $\text{Ca}(\text{NO}_3)_{2(\text{AQ})} + (\text{NH}_4)_2\text{SO}_{4(\text{AQ})} \rightarrow \text{CaSO}_{4(\text{S})} + 2\text{NH}_4\text{NO}_{3(\text{AQ})}$ <p style="text-align: center;">(balanced and table F'ed) Double replacement</p>	
$\text{Fe}_2\text{O}_{3(\text{S})} \rightarrow \text{O}_{2(\text{G})} + \text{Fe}_{(\text{S})}$ $2\text{Fe}_2\text{O}_{3(\text{S})} \rightarrow 3\text{O}_{2(\text{G})} + 4\text{Fe}_{(\text{S})}$ <p style="text-align: center;">decomposition</p>	$\text{Ti}_{(\text{S})} + \text{CuHCO}_{3(\text{AQ})} \rightarrow$ $\text{Ti}_{(\text{S})} + 2\text{CuHCO}_{3(\text{AQ})} \rightarrow \text{Ti}(\text{HCO}_3)_{2(\text{AQ})} + 2\text{Cu}_{(\text{S})}$ <p style="text-align: center;">single replacement</p>
$\text{Al}(\text{OH})_{3(\text{AQ})} + \text{CaBr}_{2(\text{AQ})} \rightarrow \text{AlBr} + \text{CaOH} \quad (\text{switched, not fixed})$ $2\text{Al}(\text{OH})_{3(\text{AQ})} + 3\text{CaBr}_{2(\text{AQ})} \rightarrow 2\text{AlBr}_{3(\text{AQ})} + 3\text{Ca}(\text{OH})_{2(\text{S})}$ <p style="text-align: center;">(balanced and table F'ed) double replacement</p>	

Given this unbalanced reaction: (remember, we don't write the "1" coefficient, this is just to help us think)



11. When the equation is balanced using the smallest whole number coefficients, what is the coefficient of Ag? A. 1 B. 2 C. 3 D. 4

12. When Lithium nitrate and Cobalt (III) hydrogen carbonate solutions combine, what is to be expected?
A. a violent exothermic reaction B. a mellow endothermic reaction
C. nothing D. cannot be determined from the information provided

For questions 14 and 15, use this given unbalanced reaction: (the "1" N₂ is just for thinking, don't write 1's!)



14. What type of reaction is represented by this equation? **Decomposition**
15. What are the lowest coefficients for each of these reactants and products, in order?
A. 1, 2, 2 **B. 2, 1, 3** C. 2, 2, 3 D. 1, 1, 1
16. If you were to place tin into an aqueous solution of sodium (II) carbonate, what would you expect to happen?
A. odor change B. CO₂ bubbles C. sodium precipitate **D. nothing at all**
17. If you mix solutions of silver nitrate and potassium chloride, what precipitate will fall out of this new solution?
A. silver chloride B. potassium nitrate C. silver nitrate D. potassium silveride
18. What is that new solution in question 17?
A. silver nitrate B. silver chloride **C. potassium nitrate** D. potassium chloride
19. Which of these four compounds makes an aqueous solution?
A. CaCrO₄ B. Mg(OH)₂ C. PbCl₂ D. Hg₂Cl₂
20. What are the results of this reaction: $2\text{HCl}_{(\text{AQ})} + \text{F}_{2(\text{G})} \rightarrow$ _____
A. nothing B. $\text{H}_{2(\text{G})} + \text{Cl}_{2(\text{G})} + \text{F}_{2(\text{AQ})}$ **C. $2\text{HF}_{(\text{G})} + \text{Cl}_{2(\text{G})}$** D. $2\text{FCl}_{2(\text{AQ})} + 2\text{H}_{(\text{G})}$
20. If a compound is insoluble, that means it is
A. dissolved in oil B. dissolved in water C. dissolved in alcohol **D. a solid in water**