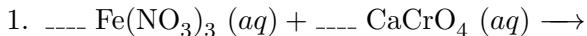


Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

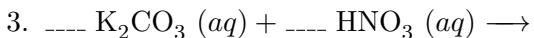
Complete and balance the following reactions. Indicate the state (solid, liquid or gas) of the products when known. If heat is produced as a product include it. If no reaction occurs write NR in the answer blank.



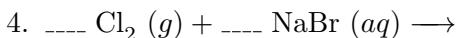
1. \_\_\_\_\_

**Solution:**  $2\text{Fe}(\text{NO}_3)_3 \text{ (aq)} + 3\text{CaCrO}_4 \text{ (aq)} \rightarrow \text{Fe}_2(\text{CrO}_4)_3 \text{ (s)} + 3\text{Ca}(\text{NO}_3)_2 \text{ (aq)}$ 

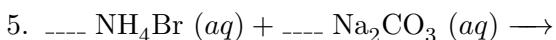
2. \_\_\_\_\_

**Solution:**  $\text{ZnSO}_4 \text{ (aq)} \rightarrow \text{ZnO} \text{ (s)} + \text{SO}_3 \text{ (g)}$  Answers may vary.

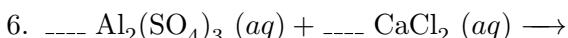
3. \_\_\_\_\_

**Solution:**  $\text{K}_2\text{CO}_3 \text{ (aq)} + 2\text{HNO}_3 \text{ (aq)} \rightarrow + 2\text{KNO}_3 \text{ (aq)} + \text{H}_2\text{O(l)} + \text{CO}_2\text{(g)}$ 

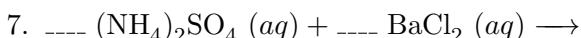
4. \_\_\_\_\_

**Solution:**  $\text{Cl}_2 \text{ (g)} + 2\text{NaBr} \text{ (aq)} \rightarrow 2\text{NaCl} \text{ (aq)} + \text{Br}_2 \text{ (l)}$ 

5. \_\_\_\_\_

**Solution:**  $\text{NH}_4\text{Br} \text{ (aq)} + \text{Na}_2\text{CO}_3 \text{ (aq)} \rightarrow \text{NR}$ 

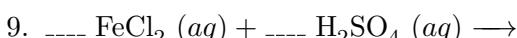
6. \_\_\_\_\_

**Solution:**  $\text{Al}_2(\text{SO}_4)_3 \text{ (aq)} + 3\text{CaCl}_2 \text{ (aq)} \rightarrow 2\text{AlCl}_3 \text{ (aq)} + 3\text{CaSO}_4 \text{ (s)}$ 

7. \_\_\_\_\_

**Solution:**  $(\text{NH}_4)_2\text{SO}_4 \text{ (aq)} + \text{BaCl}_2 \text{ (aq)} \rightarrow + 2\text{NH}_4\text{Cl} \text{ (aq)} + \text{BaSO}_4 \text{ (s)}$ 

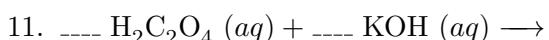
8. \_\_\_\_\_

**Solution:**  $\text{MgCO}_3 \text{ (aq)} \rightarrow \text{MgO} \text{ (s)} + \text{CO}_2 \text{ (g)}$  Answers may vary.

9. \_\_\_\_\_

**Solution:**  $\text{FeCl}_2 \text{ (aq)} + \text{H}_2\text{SO}_4 \text{ (aq)} \rightarrow \text{NR}$ 

10. \_\_\_\_\_

**Solution:**  $3\text{O}_2 \text{ (g)} + \text{C}_2\text{H}_5\text{OH} \text{ (aq)} \rightarrow 2\text{CO}_2 \text{ (g)} + 3\text{H}_2\text{O (l)} + \text{heat}$ 

11. \_\_\_\_\_

**Solution:**  $\text{H}_2\text{C}_2\text{O}_4 \text{ (aq)} + 2\text{KOH} \text{ (aq)} \rightarrow \text{K}_2\text{C}_2\text{O}_4 \text{ (aq)} + 2\text{H}_2\text{O (l)} + \text{heat}$ 

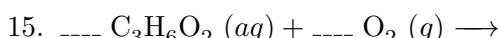
12. \_\_\_\_\_

**Solution:**  $\text{Fe (s)} + \text{MgCl}_2 \text{ (aq)} \rightarrow \text{NR}$ 

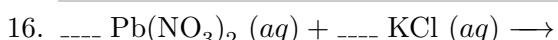
13. \_\_\_\_\_

**Solution:**  $\text{Zn (s)} + 2\text{HNO}_3 \text{ (aq)} \rightarrow \text{Zn}(\text{NO}_3)_2 \text{ (aq)} + \text{H}_2 \text{ (g)}$ 

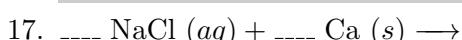
14. \_\_\_\_\_

**Solution:**  $2\text{HCl} \text{ (aq)} + \text{Mg(OH)}_2 \text{ (aq)} \rightarrow \text{MgCl}_2 \text{ (aq)} + 2\text{H}_2\text{O (l)} + \text{heat}$ 

15. \_\_\_\_\_

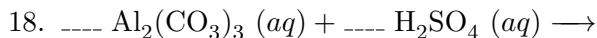
**Solution:**  $2\text{C}_3\text{H}_6\text{O}_2 \text{ (aq)} + 7\text{O}_2 \text{ (g)} \rightarrow 6\text{CO}_2 \text{ (g)} + 6\text{H}_2\text{O (l)} + \text{heat}$ 

16. \_\_\_\_\_

**Solution:**  $\text{Pb}(\text{NO}_3)_2 \text{ (aq)} + 2\text{KCl} \text{ (aq)} \rightarrow \text{PbCl}_2 \text{ (s)} + 2\text{KNO}_3 \text{ (aq)}$ 

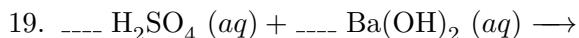
17. \_\_\_\_\_

**Solution:**  $2\text{NaCl}(\text{aq}) + \text{Ca}(\text{s}) \rightarrow \text{CaCl}_2(\text{aq}) + 2\text{Na}(\text{s})$



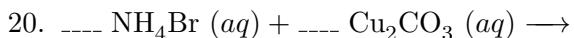
18. \_\_\_\_\_

**Solution:**  $\text{Al}_2(\text{CO}_3)_3(\text{aq}) + 3\text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{Al}_2(\text{SO}_4)_3(\text{aq}) + 3\text{H}_2\text{CO}_3(\text{d}) + 3\text{H}_2\text{O}(\text{l}) + 3\text{CO}_2(\text{g})$



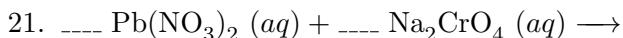
19. \_\_\_\_\_

**Solution:**  $\text{H}_2\text{SO}_4(\text{aq}) + \text{Ba}(\text{OH})_2(\text{aq}) \rightarrow \text{BaSO}_4(\text{s}) + 2\text{H}_2\text{O}(\text{l}) + \text{heat}$



20. \_\_\_\_\_

**Solution:**  $\text{NH}_4\text{Br}(\text{aq}) + \text{Cu}_2\text{CO}_3(\text{aq}) \rightarrow \text{NR}$



21. \_\_\_\_\_

**Solution:**  $\text{Pb}(\text{NO}_3)_2(\text{aq}) + \text{Na}_2\text{CrO}_4(\text{aq}) \rightarrow \text{PbCrO}_4(\text{s}) + 2\text{NaNO}_3(\text{aq})$



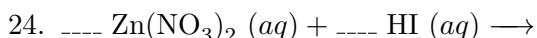
22. \_\_\_\_\_

**Solution:**  $2\text{Al}(\text{s}) + 2\text{H}_3\text{PO}_4(\text{aq}) \rightarrow 2\text{AlPO}_4(\text{aq}) + 3\text{H}_2(\text{g})$



23. \_\_\_\_\_

**Solution:**  $\text{Pb}(\text{s}) + \text{ZnCl}_2(\text{aq}) \rightarrow \text{NR}$



24. \_\_\_\_\_

**Solution:**  $\text{Zn}(\text{NO}_3)_2(\text{aq}) + \text{HI}(\text{aq}) \rightarrow \text{NR}$



25. \_\_\_\_\_

**Solution:**  $3\text{Cl}_2(\text{g}) + 2\text{FeBr}_3(\text{aq}) \rightarrow 2\text{FeCl}_3(\text{aq}) + 3\text{Br}_2(\text{l})$