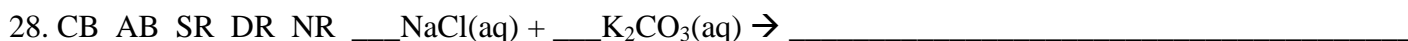
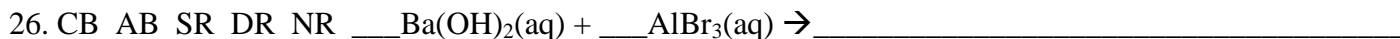
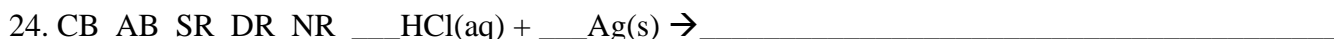
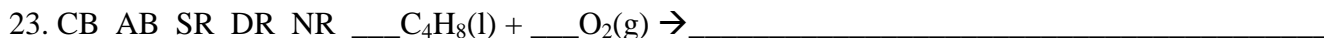
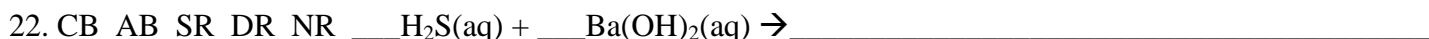
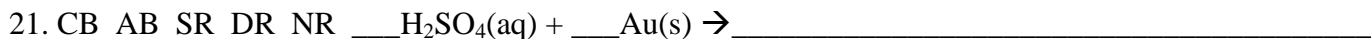
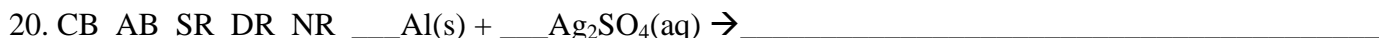
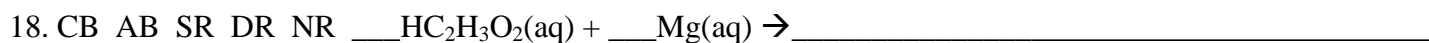


## CHM 130 Predicting Products Worksheet

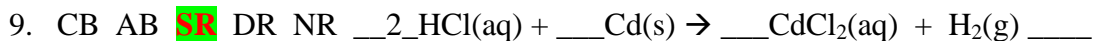
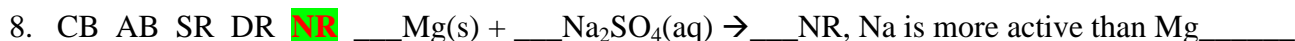
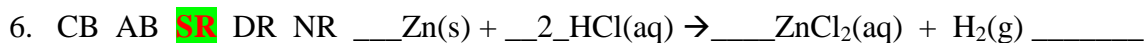
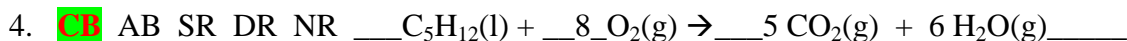
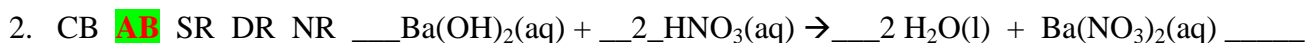
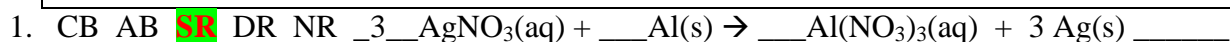
Circle the appropriate reaction type for each, complete the reaction with products (remember to check charges for ionic compounds), include states, and finally balance each reaction.

CB = combustion, AB = acid base neutralization, SR = single replacement,  
DR = double replacement, NR = no reaction

1. CB AB SR DR NR \_\_\_  $\text{AgNO}_3(\text{aq})$  + \_\_\_  $\text{Al}(\text{s}) \rightarrow$  \_\_\_\_\_
2. CB AB SR DR NR \_\_\_  $\text{Ba}(\text{OH})_2(\text{aq})$  + \_\_\_  $\text{HNO}_3(\text{aq}) \rightarrow$  \_\_\_\_\_
3. CB AB SR DR NR \_\_\_  $\text{Au}(\text{s})$  + \_\_\_  $\text{FeCl}_2(\text{aq}) \rightarrow$  \_\_\_\_\_
4. CB AB SR DR NR \_\_\_  $\text{C}_3\text{H}_{12}(\text{l})$  + \_\_\_  $\text{O}_2(\text{g}) \rightarrow$  \_\_\_\_\_
5. CB AB SR DR NR \_\_\_  $\text{Na}_3\text{PO}_4(\text{aq})$  + \_\_\_  $\text{AgNO}_3(\text{aq}) \rightarrow$  \_\_\_\_\_
6. CB AB SR DR NR \_\_\_  $\text{Zn}(\text{s})$  + \_\_\_  $\text{HCl}(\text{aq}) \rightarrow$  \_\_\_\_\_
7. CB AB SR DR NR \_\_\_  $\text{AgC}_2\text{H}_3\text{O}_2(\text{aq})$  + \_\_\_  $\text{MgCl}_2(\text{aq}) \rightarrow$  \_\_\_\_\_
8. CB AB SR DR NR \_\_\_  $\text{Mg}(\text{s})$  + \_\_\_  $\text{Na}_2\text{SO}_4(\text{aq}) \rightarrow$  \_\_\_\_\_
9. CB AB SR DR NR \_\_\_  $\text{HCl}(\text{aq})$  + \_\_\_  $\text{Cd}(\text{s}) \rightarrow$  \_\_\_\_\_
10. CB AB SR DR NR \_\_\_  $\text{Al}(\text{s})$  + \_\_\_  $\text{KOH}(\text{aq}) \rightarrow$  \_\_\_\_\_
11. CB AB SR DR NR \_\_\_  $\text{CuCl}_2(\text{aq})$  + \_\_\_  $\text{Zn}(\text{s}) \rightarrow$  \_\_\_\_\_
12. CB AB SR DR NR \_\_\_  $\text{NaOH}(\text{aq})$  + \_\_\_  $\text{H}_3\text{PO}_4(\text{aq}) \rightarrow$  \_\_\_\_\_
13. CB AB SR DR NR \_\_\_  $\text{HBr}(\text{aq})$  + \_\_\_  $\text{Al}(\text{s}) \rightarrow$  \_\_\_\_\_
14. CB AB SR DR NR \_\_\_  $\text{Pb}(\text{NO}_3)_2(\text{aq})$  + \_\_\_  $\text{Al}(\text{s}) \rightarrow$  \_\_\_\_\_
15. CB AB SR DR NR \_\_\_  $\text{C}_7\text{H}_{16}(\text{l})$  + \_\_\_  $\text{O}_2(\text{g}) \rightarrow$  \_\_\_\_\_
16. CB AB SR DR NR \_\_\_  $\text{Mg}(\text{s})$  + \_\_\_  $\text{AgNO}_3(\text{aq}) \rightarrow$  \_\_\_\_\_
17. CB AB SR DR NR \_\_\_  $\text{H}_2\text{SO}_3(\text{aq})$  + \_\_\_  $\text{KOH}(\text{aq}) \rightarrow$  \_\_\_\_\_



## Answers



10. CB AB SR DR **NR** \_\_\_Al(s) + \_\_\_KOH(aq) → \_\_\_NR, K is more active than Al\_\_\_
11. CB AB **SR** DR NR \_\_\_CuCl<sub>2</sub>(aq) + \_\_\_Zn(s) → \_\_\_Cu(s) + ZnCl<sub>2</sub>(aq) \_\_\_\_\_
12. CB **AB** SR DR NR \_\_\_3\_NaOH(aq) + \_\_\_H<sub>3</sub>PO<sub>4</sub>(aq) → \_\_\_3 H<sub>2</sub>O(l) + Na<sub>3</sub>PO<sub>4</sub>(aq) \_\_\_\_\_
13. CB AB **SR** DR NR \_\_\_6\_HBr(aq) + \_\_\_2\_Al(s) → \_\_\_2\_AlBr<sub>3</sub>(aq) + 3 H<sub>2</sub>(g) \_\_\_\_\_
14. CB AB **SR** DR NR \_\_\_3\_Pb(NO<sub>3</sub>)<sub>2</sub>(aq) + \_\_\_2\_Al(s) → \_\_\_2 Al(NO<sub>3</sub>)<sub>3</sub>(aq) + 3 Pb(s) \_\_\_\_\_
15. **CB** AB SR DR NR \_\_\_C<sub>7</sub>H<sub>16</sub>(l) + \_\_\_11\_O<sub>2</sub>(g) → \_\_\_7 CO<sub>2</sub>(g) + 8 H<sub>2</sub>O(g) \_\_\_
16. CB AB **SR** DR NR \_\_\_Mg(s) + \_\_\_2\_AgNO<sub>3</sub>(aq) → \_\_\_2 Ag(s) + Mg(NO<sub>3</sub>)<sub>2</sub>(aq)\_\_\_\_\_
17. CB **AB** SR DR NR \_\_\_H<sub>2</sub>SO<sub>3</sub>(aq) + \_\_\_2\_KOH(aq) → \_\_\_2 H<sub>2</sub>O(l) + K<sub>2</sub>SO<sub>3</sub>(aq) \_\_\_\_\_
18. CB AB **SR** DR NR \_\_\_2\_HC<sub>2</sub>H<sub>3</sub>O<sub>2</sub>(aq) + \_\_\_Mg(aq) → \_\_\_Mg(C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>)<sub>2</sub>(aq) + H<sub>2</sub>(g)\_\_\_
19. CB AB SR **DR** NR \_\_\_3\_Cd(NO<sub>3</sub>)<sub>2</sub>(aq) + \_\_\_2\_Li<sub>3</sub>PO<sub>4</sub>(aq) → \_\_\_6 LiNO<sub>3</sub>(aq) + Cd<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>(s)\_\_\_\_\_
20. CB AB **SR** DR NR \_\_\_2\_Al(s) + \_\_\_3\_Ag<sub>2</sub>SO<sub>4</sub>(aq) → \_\_\_6\_Ag(s) + Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>(aq)\_\_\_\_\_
21. CB AB SR DR **NR** \_\_\_H<sub>2</sub>SO<sub>4</sub>(aq) + \_\_\_Au(s) → \_\_\_NR, H is more active than Au\_\_\_\_\_
22. CB **AB** SR DR NR \_\_\_H<sub>2</sub>S(aq) + \_\_\_Ba(OH)<sub>2</sub>(aq) → \_\_\_2 H<sub>2</sub>O(l) + BaS(aq)\_\_\_\_\_
23. **CB** AB SR DR NR \_\_\_C<sub>4</sub>H<sub>8</sub>(l) + \_6\_\_O<sub>2</sub>(g) → \_\_\_4 CO<sub>2</sub>(g) + 4 H<sub>2</sub>O(g) \_\_\_\_\_
24. CB AB SR DR **NR** \_\_\_HCl(aq) + \_\_\_Ag(s) → \_\_\_NR H is more active than Ag\_\_\_\_\_
25. CB **AB** SR DR NR \_\_\_Ca(OH)<sub>2</sub>(aq) + \_\_\_2\_HC<sub>2</sub>H<sub>3</sub>O<sub>2</sub>(aq) → \_\_\_2 H<sub>2</sub>O(l) + Ca(C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>)<sub>2</sub>(aq) \_\_\_
26. CB AB SR **DR** NR \_\_\_3\_Ba(OH)<sub>2</sub>(aq) + \_\_\_2\_AlBr<sub>3</sub>(aq) → \_\_\_3\_BaBr<sub>2</sub>(aq) + 2 Al(OH)<sub>3</sub>(s)\_\_\_\_\_
27. CB **AB** SR DR NR \_\_\_3\_Sr(OH)<sub>2</sub>(aq) + \_\_\_2\_H<sub>3</sub>PO<sub>4</sub>(aq) → \_\_\_6 H<sub>2</sub>O(l) + Sr<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>(s)\_\_\_\_\_
28. CB AB SR DR **NR** \_\_\_NaCl(aq) + \_\_\_K<sub>2</sub>CO<sub>3</sub>(aq) → \_\_\_NR, products are both (aq) meaning all ions so nothing happened in this reaction, that would have been double replacement if a solid had formed\_\_\_\_\_