

Classifying Reactions and Balancing Chemical Equations

For each of the chemical reactions are listed below, complete the following:

 Balance the skeletal equation

 The type of chemical reaction (synthesis, decomposition, single displacement, or double displacement)

1.

 Balance the skeletal equation: $\underline{2} \text{Cu} + \underline{\quad} \text{O}_2 \rightarrow \underline{2} \text{CuO}$

 Reaction type: synthesis
2.

 Balance the skeletal equation: $\underline{2} \text{H}_2\text{O} \rightarrow \underline{\quad} \text{O}_2 + \underline{2} \text{H}_2$

 Reaction type: decomposition
3.

 Balance the skeletal equation: $\underline{2} \text{Fe} + \underline{3} \text{H}_2\text{O} \rightarrow \underline{\quad} \text{Fe}_2\text{O}_3 + \underline{3} \text{H}_2$

 Reaction type: single displacement
4.

 Balance the skeletal equation: $\underline{3} \text{H}_2\text{S} + \underline{2} \text{AsCl}_3 \rightarrow \underline{\quad} \text{As}_2\text{S}_3 + \underline{6} \text{HCl}$

 Reaction type: double displacement
5.

 Balance the skeletal equation: $\underline{\quad} \text{CaCO}_3 \rightarrow \underline{\quad} \text{CO}_2 + \underline{\quad} \text{CaO}$

 Reaction type: decomposition
6.

 Balance the skeletal equation: $\underline{\quad} \text{H}_2\text{S} + \underline{2} \text{KOH} \rightarrow \underline{\quad} \text{K}_2\text{S} + \underline{2} \text{HOH}$

 Reaction type: double displacement
7.

 Balance the skeletal equation: $\underline{\quad} \text{S}_8 + \underline{8} \text{Fe} \rightarrow \underline{8} \text{FeS}$

 Reaction type: synthesis
8.

 Balance the skeletal equation: $\underline{3} \text{H}_2\text{SO}_4 + \underline{2} \text{Al} \rightarrow \underline{\quad} \text{Al}_2(\text{SO}_4)_3 + \underline{3} \text{H}_2$

 Reaction type: single displacement
9.

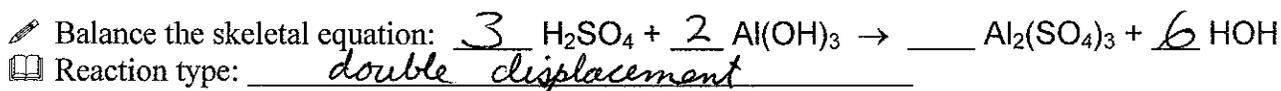
 Balance the skeletal equation: $\underline{\quad} \text{H}_3\text{PO}_4 + \underline{3} \text{NH}_4\text{OH} \rightarrow \underline{\quad} (\text{NH}_4)_3\text{PO}_4 + \underline{3} \text{HOH}$

 Reaction type: double displacement
10.

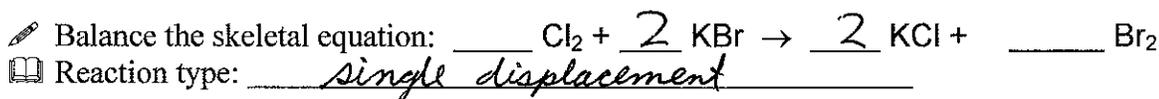
 Balance the skeletal equation: $\underline{3} \text{O}_2 + \underline{4} \text{Al} \rightarrow \underline{2} \text{Al}_2\text{O}_3$

 Reaction type: synthesis

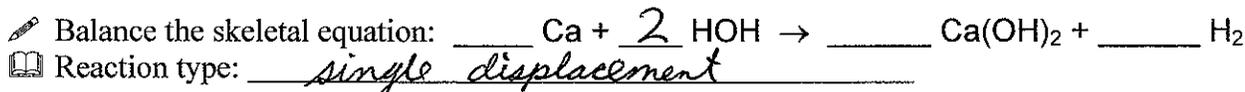
11.



12.



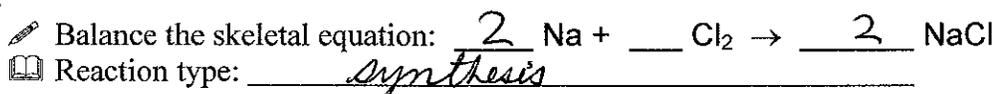
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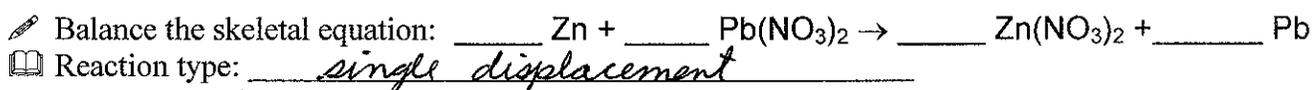
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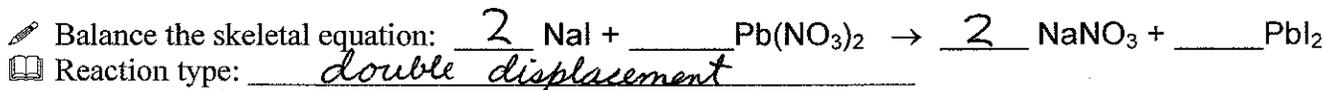
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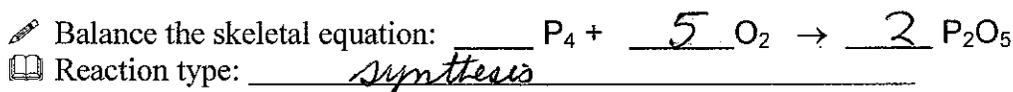
16.



17.



18.



19.



20.

