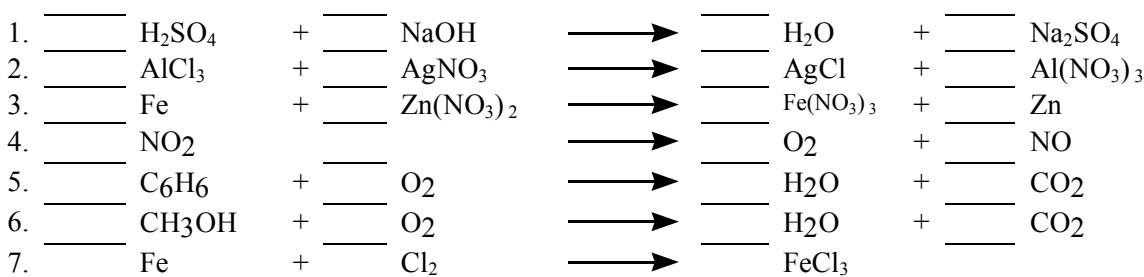


Worksheet 10

Balance the following equations:



For each of the following, state the type of reaction.

8.		$\text{C}_4\text{H}_8(\text{g}) + 6\text{O}_2(\text{g}) \rightarrow 4\text{CO}_2(\text{g}) + 4\text{H}_2\text{O}(\text{g})$
9.		$3\text{Cl}_2(\text{g}) + 2\text{CoI}_3(\text{s}) \rightarrow 3\text{I}_2(\text{s}) + 2\text{CoCl}_3(\text{aq})$
10.		$\text{P}_2\text{O}_5(\text{s}) + 3\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{H}_3\text{PO}_4(\text{aq})$
11.		$\text{H}_2\text{SO}_3(\text{aq}) + \text{KOH}(\text{aq}) \rightarrow 2\text{H}_2\text{O}(\text{l}) + \text{K}_2\text{SO}_3(\text{aq})$
12.		$2\text{K}_3\text{PO}_4(\text{aq}) + 3\text{FeCl}_2(\text{aq}) \rightarrow 6\text{KCl}(\text{aq}) + \text{Fe}_3(\text{PO}_4)_2(\text{s})$
13.		$2\text{C}_6\text{H}_6(\text{l}) + 15\text{O}_2(\text{g}) \rightarrow 12\text{CO}_2(\text{g}) + 6\text{H}_2\text{O}(\text{g})$
14.		$3\text{Mg}(\text{s}) + \text{N}_2(\text{g}) \rightarrow \text{Mg}_3\text{N}_2(\text{s})$
15.		$\text{Na}_2\text{SO}_4(\text{aq}) + \text{Pb}(\text{NO}_3)_2(\text{aq}) \rightarrow 2\text{NaNO}_3(\text{aq}) + \text{PbSO}_4(\text{s})$
16.		$2\text{KBr}(\text{s}) + \text{Cl}_2(\text{g}) \rightarrow \text{Br}_2(\text{l}) + 2\text{KCl}(\text{s})$
17.		$2\text{HgO}(\text{s}) \rightarrow 2\text{Hg}(\text{l}) + \text{O}_2(\text{g})$
18.		$2\text{H}_3\text{PO}_4(\text{aq}) + 3\text{Ba}(\text{OH})_2(\text{aq}) \rightarrow 6\text{H}_2\text{O}(\text{l}) + \text{Ba}_3(\text{PO}_4)_2(\text{s})$
19.		$\text{Zn}(\text{s}) + \text{CuSO}_4(\text{aq}) \rightarrow \text{Cu}(\text{s}) + \text{ZnSO}_4(\text{aq})$
20.		$2\text{Mn}(\text{s}) + \text{O}_2(\text{g}) \rightarrow 2\text{MnO}(\text{s})$
21.		$\text{H}_2\text{SO}_3(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l}) + \text{SO}_2(\text{g})$

For the buffer made by mixing solutions of HF and KF answer the following questions:

22.	What are the particles present in the solution?	
23.	What particle reacts with added H^+ ?	
24.	What particle reacts with added OH^- ?	

For the buffer made by mixing solutions of NH_3 and NH_4Cl answer the following questions:

25.	What are the particles present in the solution?	
26.	What particle reacts with added H^+ ?	
27.	What particle reacts with added OH^- ?	

For the buffer made by mixing solutions of HNO_2 and LiNO_2 answer the following questions:

28.	What are the particles present in the solution?	
29.	What particle reacts with added H^+ ?	
30.	What particle reacts with added OH^- ?	