

Redox Reactions Review

① (a) reduction (b) oxidation (c) oxidation (d) reduction

② oxidized reduced

(a) Br Cl

(b) Ce Cu

(c) Zn O

③ oxidizing agent reducing agent

(a) I₂ Mg

(b) H Na

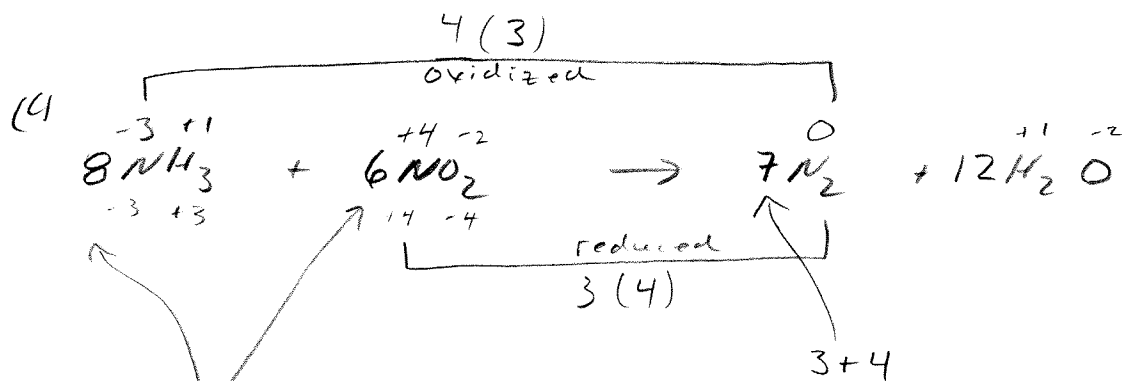
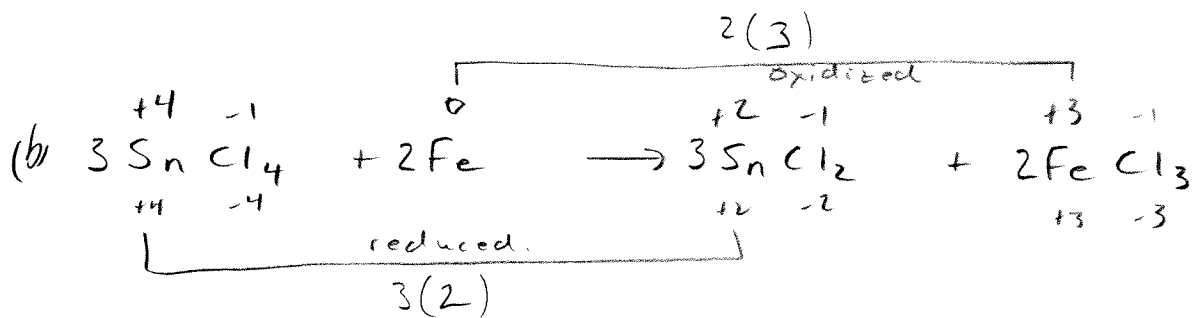
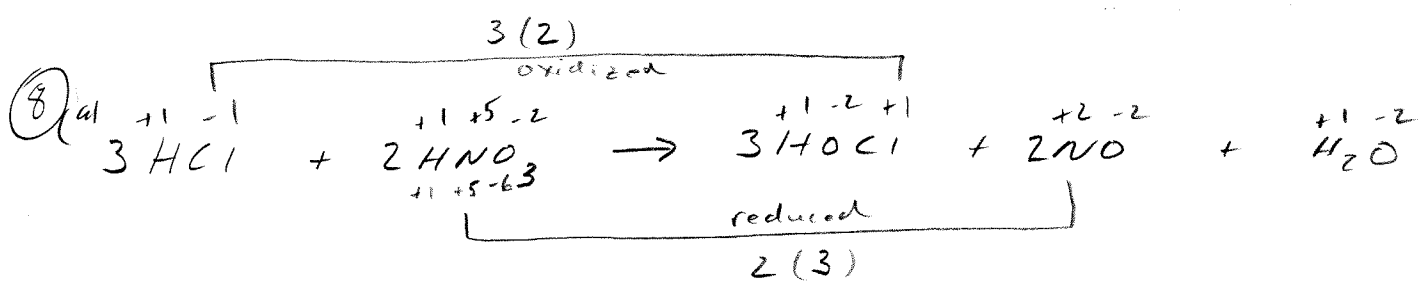
(c) Cl₂ H₂S

④ (a) $\begin{array}{ccc} +1 & \textcircled{+7} & -2 \\ \text{Na} & \text{Cl} & \text{O}_4 \\ +1 & -7 & -8 \end{array}$ (b) $\begin{array}{ccc} +3 & \textcircled{+5} & -2 \\ \text{Al} & \text{P} & \text{O}_4 \\ +3 & +5 & -8 \end{array}$ (c) $\begin{array}{ccc} +1 & \textcircled{+3} & -2 \\ \text{H} & \text{N} & \text{O}_2 \\ +1 & +3 & -4 \end{array}$

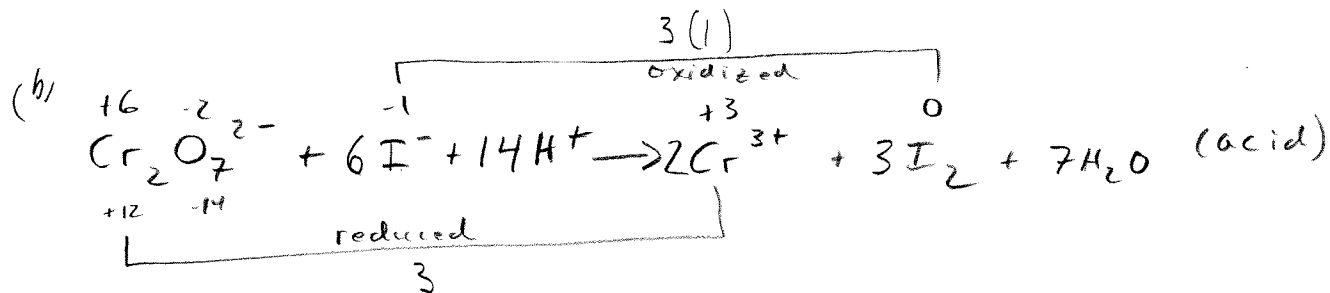
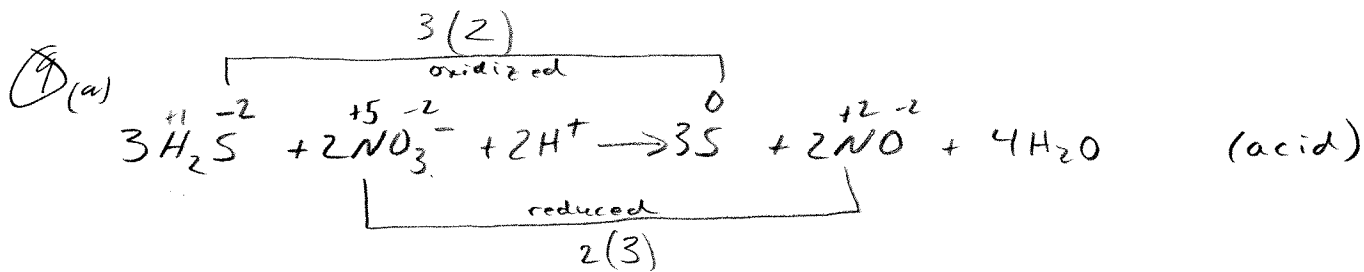
⑤ (a) $\begin{array}{ccc} \textcircled{+9} & -2 & \\ \text{N} & \text{H}_4 & ^+ \\ +9 & -8 & \end{array}$ (b) $\begin{array}{ccc} \textcircled{+5} & -2 & 3- \\ \text{As} & \text{O}_4 & \\ +5 & -8 & \end{array}$ (c) $\begin{array}{ccc} \textcircled{+6} & -2 & 2- \\ \text{Cr} & \text{O}_4 & \\ +6 & -8 & \end{array}$

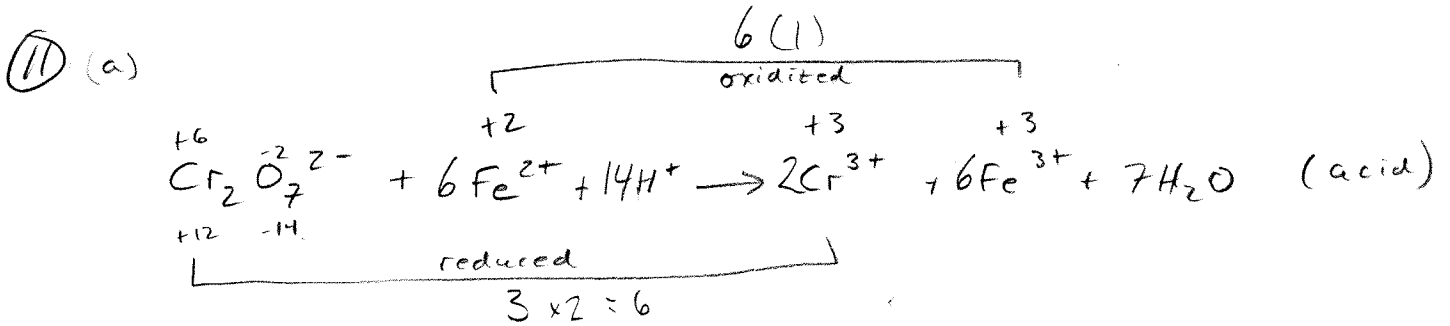
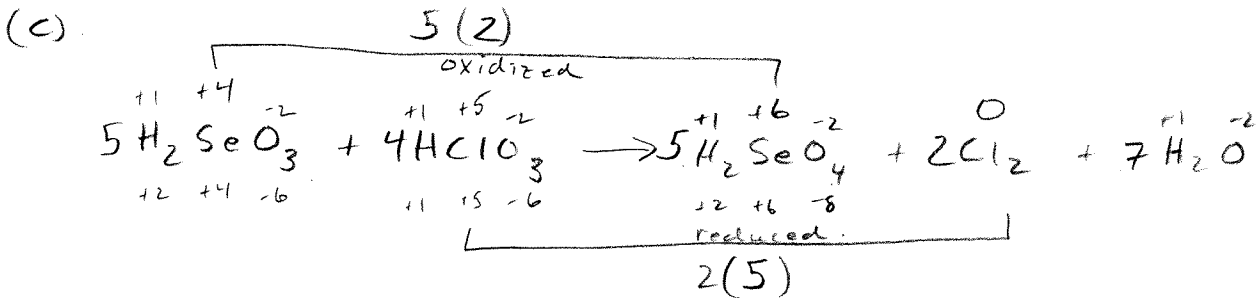
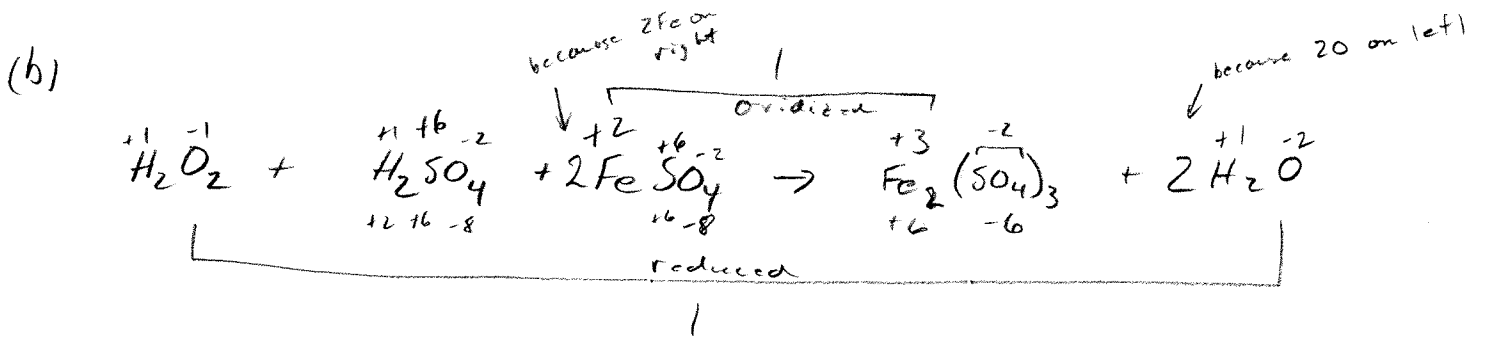
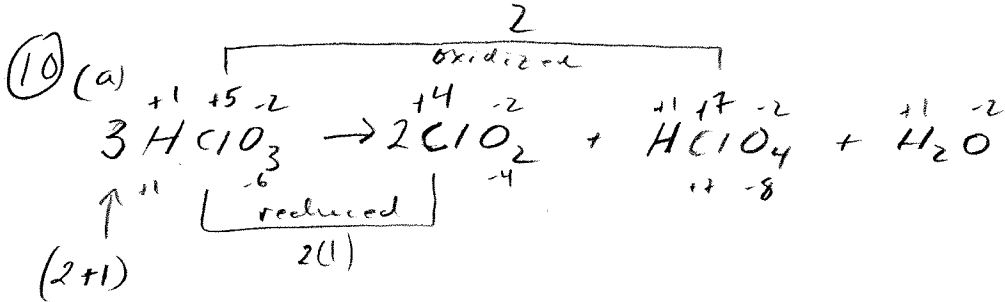
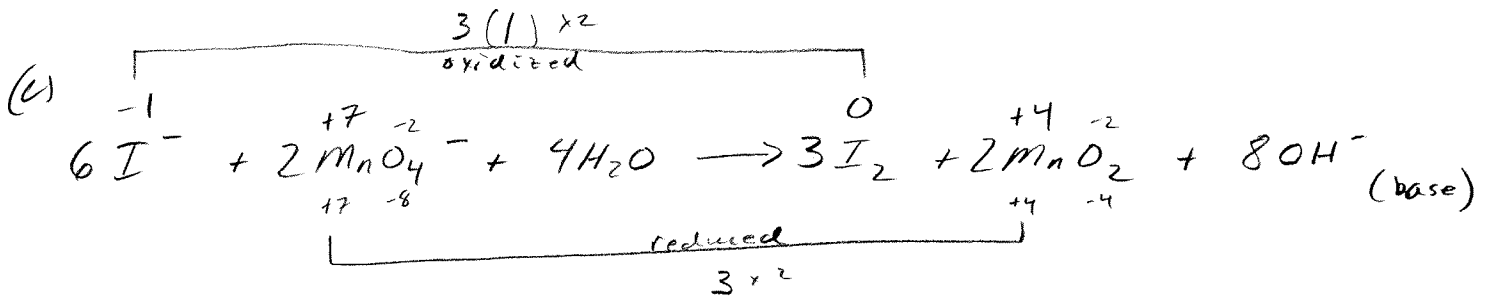
⑥ (a) $\begin{array}{ccc} \textcircled{+5} & -2 & \\ \text{Sb} & \text{O}_5 & \\ +10 & -10 & \end{array}$ (b) $\begin{array}{ccc} +1 & \textcircled{+5} & 2 \\ \text{H} & \text{N} & \text{O}_3 \\ +1 & +5 & -6 \end{array}$ (c) $\begin{array}{ccc} +2 & \textcircled{-1} & \\ \text{Ca} & \text{N}_2 & \\ +2 & -2 & \end{array}$ (d) $\begin{array}{ccc} +2 & \textcircled{+6} & -2 \\ \text{Cu} & \text{W} & \text{O}_4 \\ +2 & +6 & -8 \end{array}$

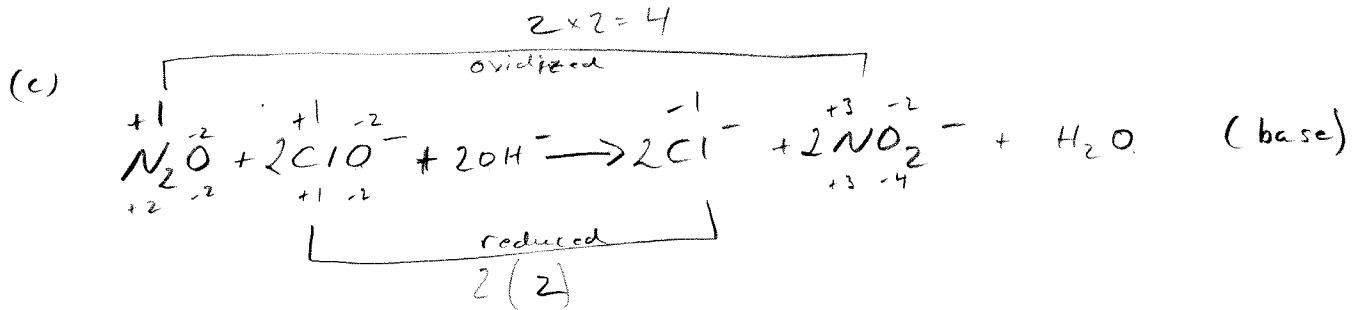
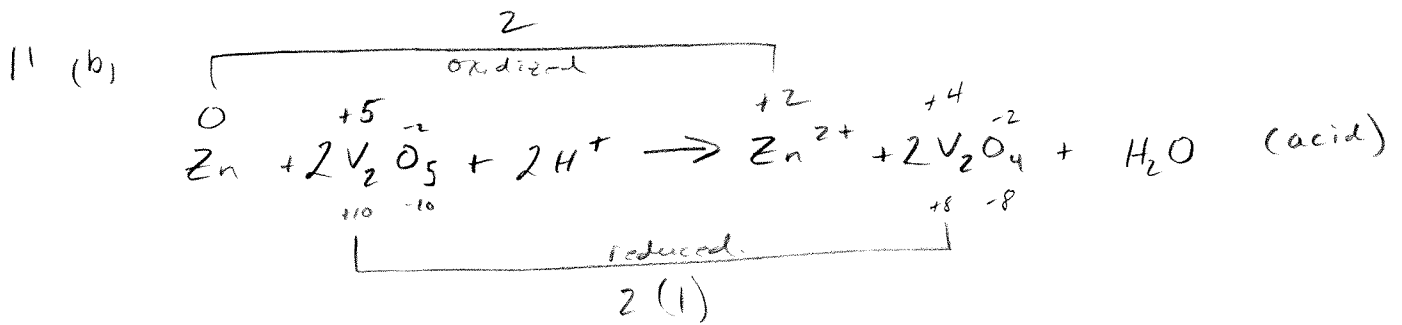
⑦ (a) $\begin{array}{ccc} \textcircled{+7} & -2 & \\ \text{I} & \text{O}_4 & \\ +7 & -8 & \end{array}$ (b) $\begin{array}{ccc} \textcircled{+7} & -2 & - \\ \text{Mn} & \text{O}_4 & \\ +7 & -8 & \end{array}$ (c) $\begin{array}{ccc} \textcircled{+3} & -2 & 2- \\ \text{B}_4 & \text{O}_7 & \\ +12 & -14 & \end{array}$ (d) $\begin{array}{ccc} \textcircled{-3} & +1 & - \\ \text{N} & \text{H}_2 & \\ -3 & +2 & \end{array}$



We need to double the coefficient because we have 2 N on the product side.

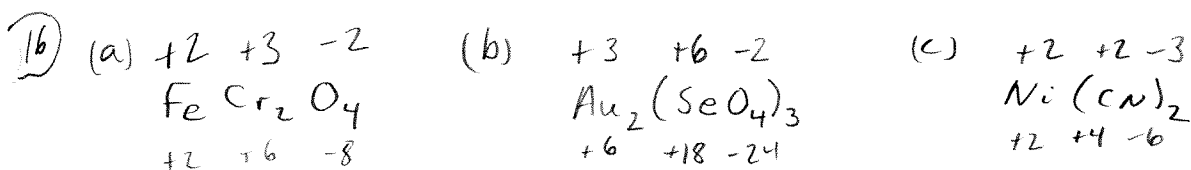
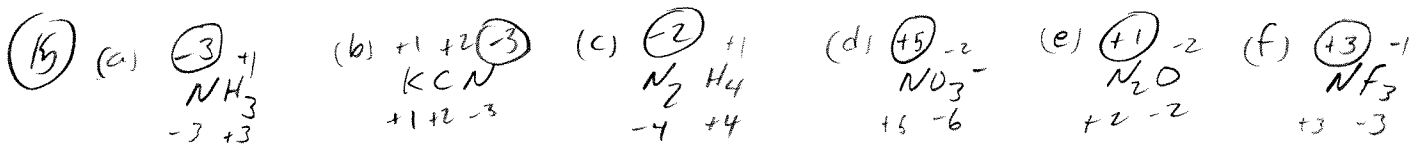
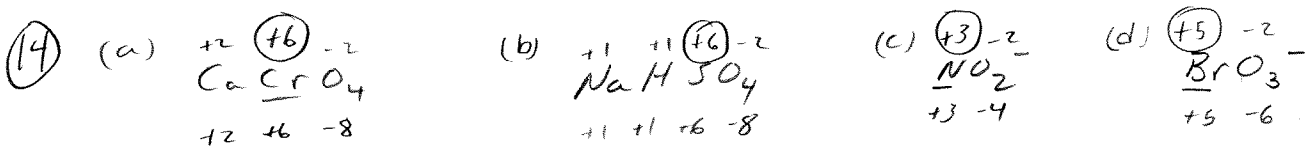




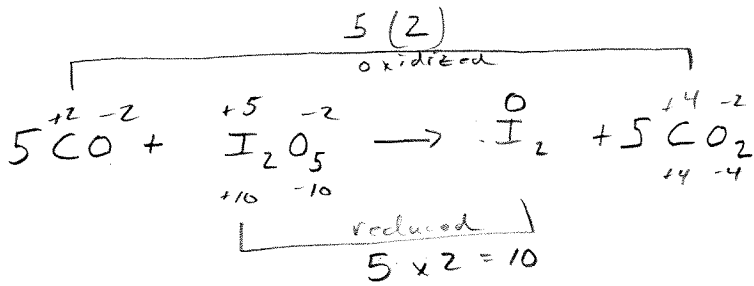


- 12
- | | <u>oxidized</u> | <u>reduced</u> |
|-----|-----------------|----------------|
| (a) | Ga | Br |
| (b) | Zn | H |
| (c) | Mg | N |

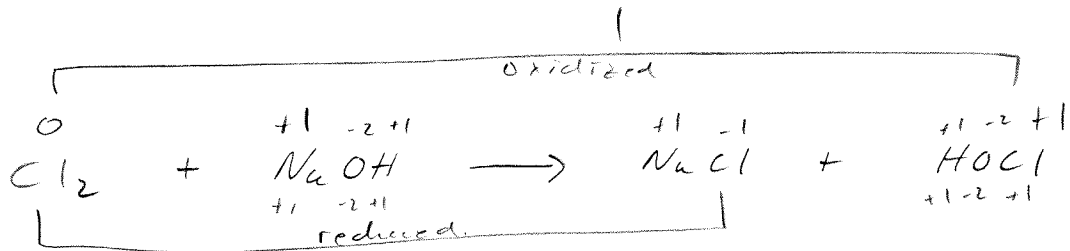
- 13
- | | <u>oxidizing agent</u> | <u>reducing agent</u> |
|-----|------------------------|-----------------------|
| (a) | Cl_2 | H_2S |
| (b) | N_2 | H_2 |
| (c) | I_2 | Na |



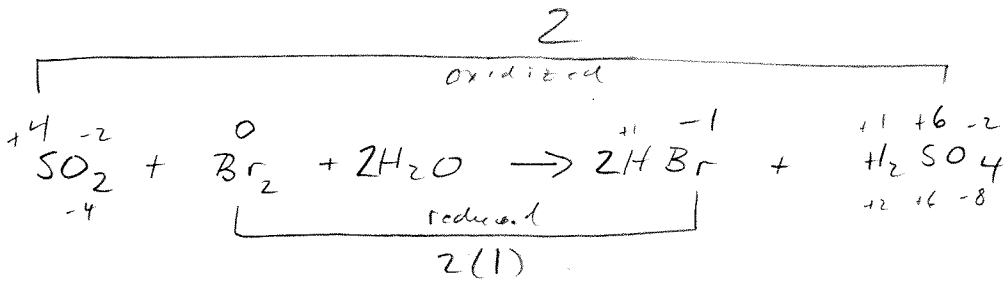
(17) (a)



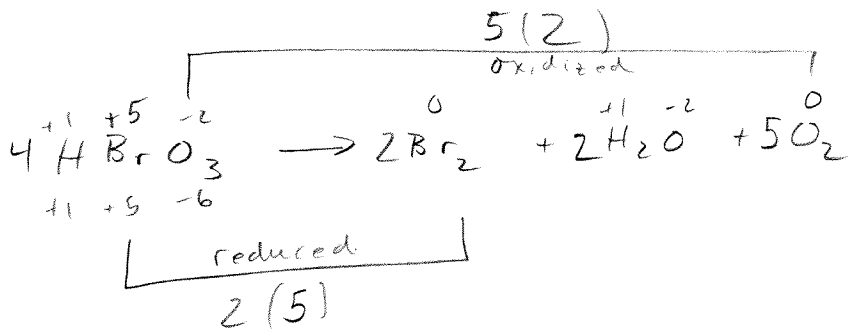
(b)



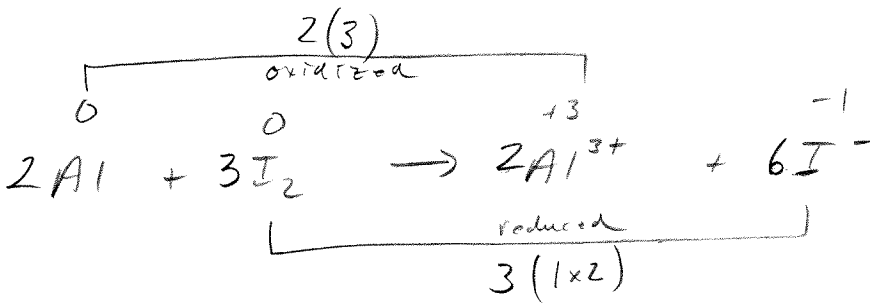
(c)

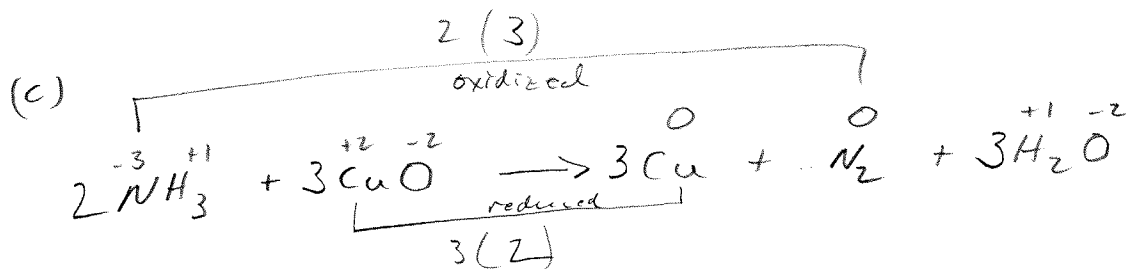
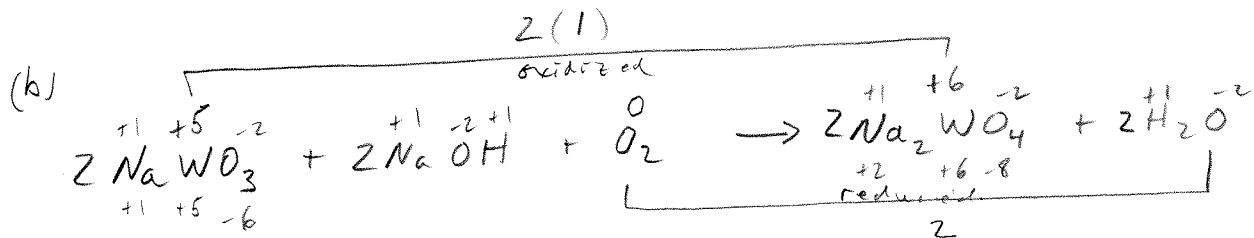
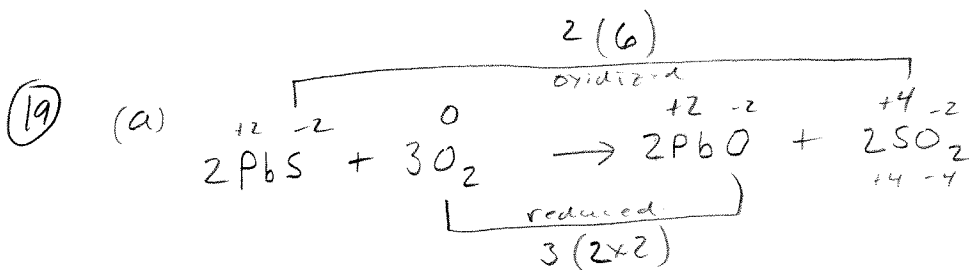
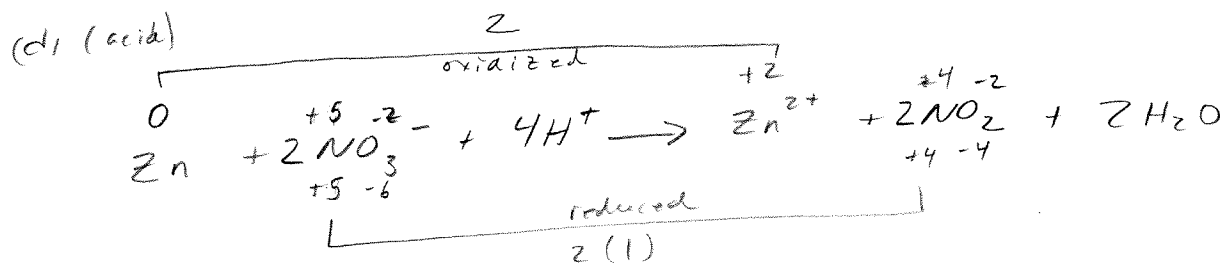
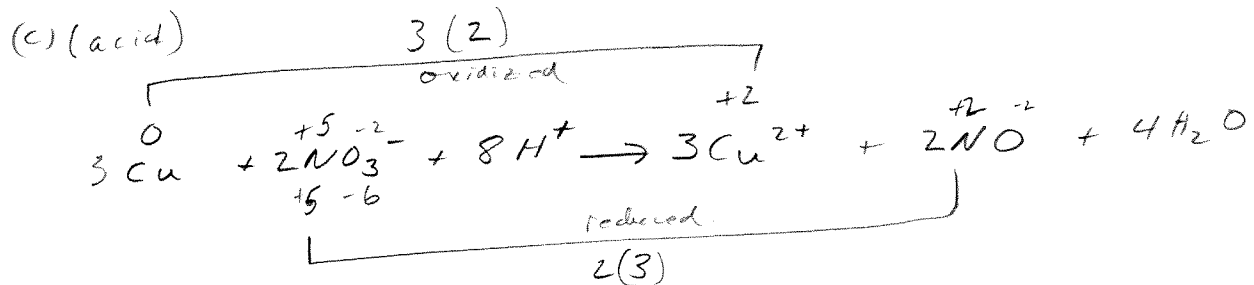
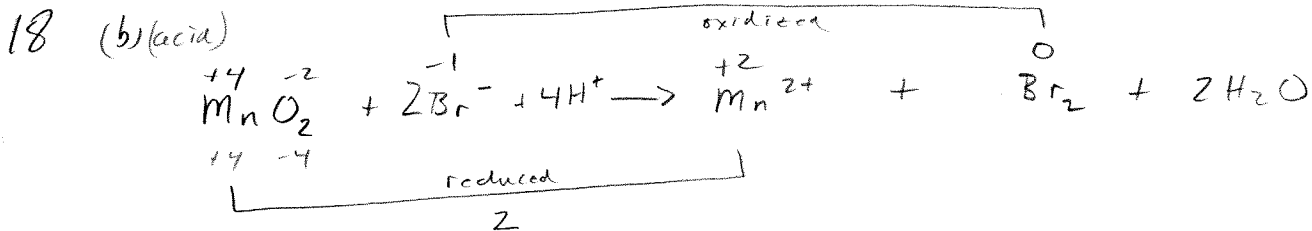


(d)

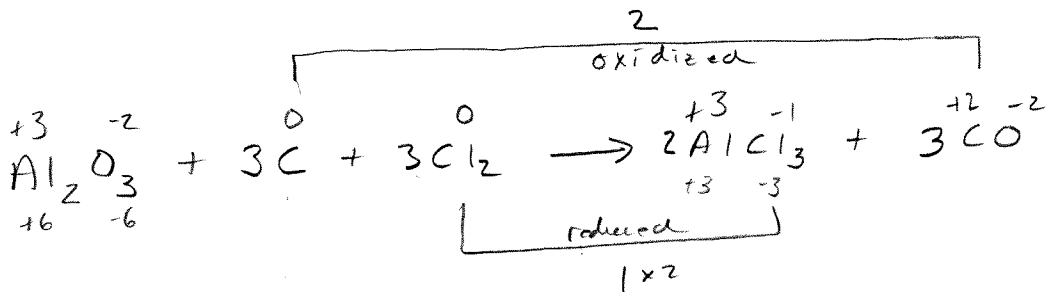


(18) (a)

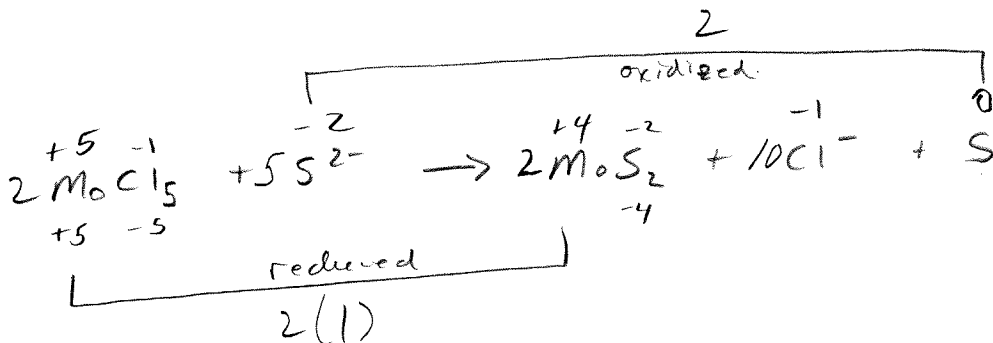




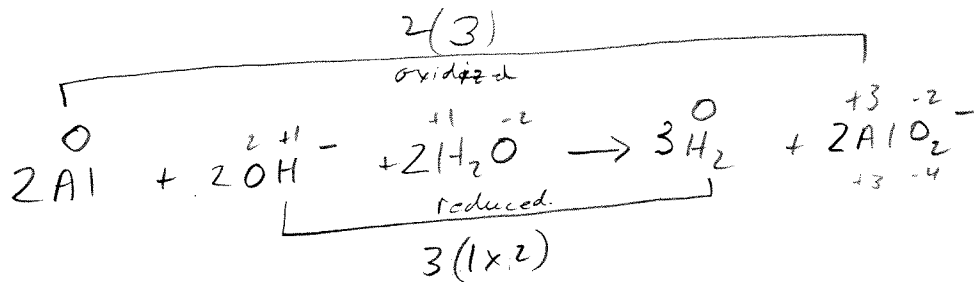
19 (d)



20 (a)



(b)



(c)

