

Mock Test

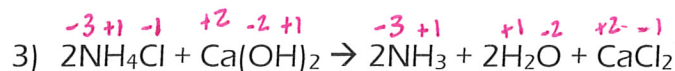
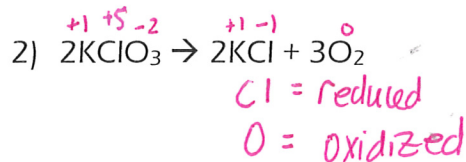
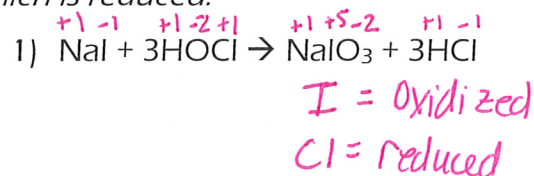
Part 1: Determining Oxidation Numbers

Instructions: Determine the oxidation number of each bolded element in the following substances.

- | | | |
|--|---|--|
| 1. Co in CoCl_2 <u>+2</u> | 6. As in As_4 <u>0</u> | 11. Fe in $\text{Fe}_3(\text{PO}_4)_2$ <u>+2</u> |
| 2. C in COCl_2 <u>+4</u> | 7. P in H_3PO_3 <u>+3</u> | 12. Cr in $\text{Cr}_2\text{O}_7^{2-}$ <u>+6</u> |
| 3. Mn in MnO_4^{-1} <u>+7</u> | 8. Ca in Ca^{2+} <u>+2</u> | 13. O in OF_2 <u>+2</u> |
| 4. O in K_2O_2 <u>-1</u> | 9. O in RbO_2 <u>-1/2</u> | 14. Cl in ClO_4^{-1} <u>+7</u> |
| 5. Br in HBrO <u>+1</u> | 10. Br in MgBr_2 <u>-1</u> | 15. H in CaH_2 <u>-1</u> |

Part 2: Identifying Redox Reactions

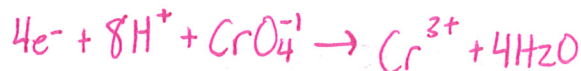
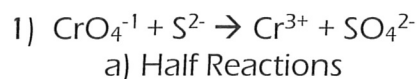
Instructions: Determine which of the following equations represent redox reactions. MUST SHOW OXIDATION NUMBERS for full credit! If it is a redox reaction, determine which element is oxidized and which is reduced.



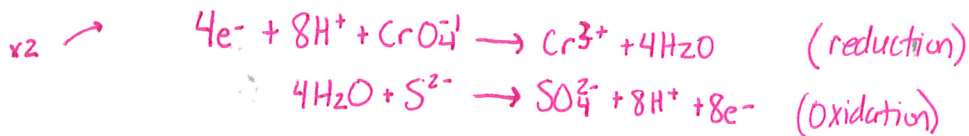
NO redox reaction

Part 3: Writing Half Reactions & Balancing Redox Reactions

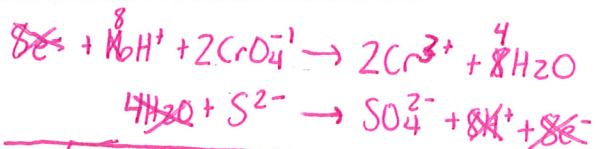
Instructions: Write the half reactions for each of the following equations. Identify which reaction is oxidation and which is reduction. Next balance it under acidic conditions. Finally, balance it under basic conditions.



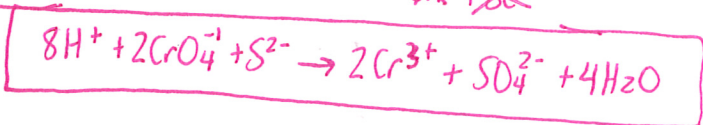
b) Which reaction oxidized? Which reaction is reduced?



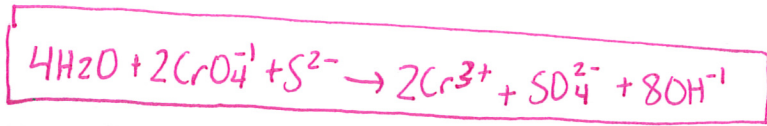
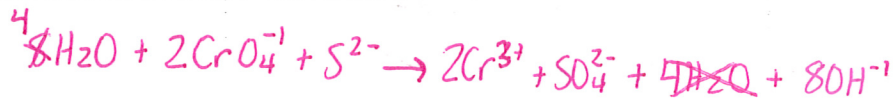
c) Balanced Redox in Acidic Conditions



+ 8OH⁻

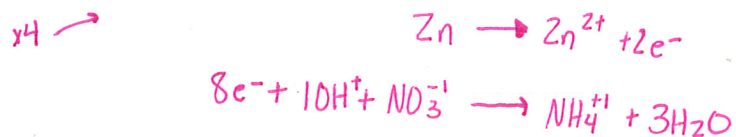


d) Balanced Redox in Basic Conditions

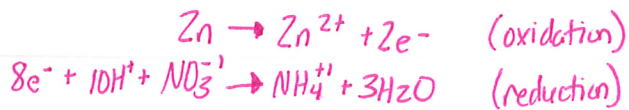


2) Zn + NO₃⁻¹ → Zn²⁺ + NH₄⁺¹

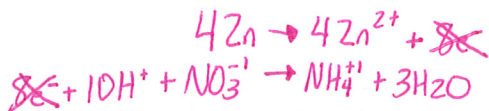
a) Half Reactions



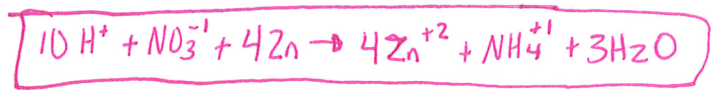
b) Which reaction oxidized? Which reaction is reduced?



c) Balanced Redox in Acidic Conditions



+ 10 OH⁻



d) Balanced Redox in Basic Conditions

