**5.3C HONORS HOMEWORK – REDOX REACTIONS**

1. Break the following redox reactions down into their half-equations:

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| (a) | Equation: | Cu2+ + Zn 🡪 Cu + Zn2+ |
| Reduction half-equation: | Cu2+ + 2e- 🡪 Cu |
| Oxidation half-equation: | Zn 🡪 Zn2+ + 2e- |

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| (b) | Equation: | Mg + 2H+ 🡪 Mg2+ + H2 |
| Reduction half-equation: |  |
| Oxidation half-equation: |  |

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| (c) | Equation: | 2I- + 2Fe3+ 🡪 I2 + 2Fe2+ |
| Reduction half-equation: |  |
| Oxidation half-equation: |  |

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| (d) | Equation: | 2Cu+ 🡪 Cu + Cu2+ |
| Reduction half-equation: |  |
| Oxidation half-equation: |  |

1. In each of the equations below, show the oxidation numbers of all the atoms in each species:

|  |  |  |  |  |  |  |  |  |  |  |
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| (a) | Equation | H2SO4 | + | 2HBr | 🡪 | SO2 | + | Br2 | + | 2H2O |
| O.N. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| (b) | Equation | Cl2 | + | H2O | 🡪 | HCl | + | HClO |
| O.N. |  |  |  |  |  |  |  |  |  |  |  |

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| (c) | Equation | HNO3 | + | NaOH | 🡪 | NaNO3 | + | H2O |
| O.N. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

1. Answer the following questions about the equations in Q2:

|  |  |
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| In Q2a, what is the oxidizing agent and what is the reducing agent? |  |
| Which of the reactions in Q2 is not a redox reaction? Explain your answer. |  |
| Which of the reactions in Q2 is a disproportionation reaction? Explain your answer. |  |