

Name: Solutions

Date: _____

Electrochemistry Practice Test

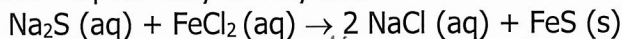
1. Determine the oxidation numbers of the underlined element in the following compounds:

- a. SO₂ +4
- b. MnO₂ +4
- c. Cr³⁺ +3
- d. SO₄²⁻ +6
- e. H₃BO₃ +3
- f. Na₂O₂ (sodium peroxide) -1
- g. Sn 0
- h. K₂Cr₂O₇ +6

2. Determine the oxidation number of each element in (NH₄)₂CO₃.

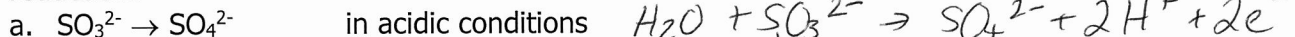
N -3 C +4
H +1 O -2

3. Is this a redox reaction? Explain why or why not.

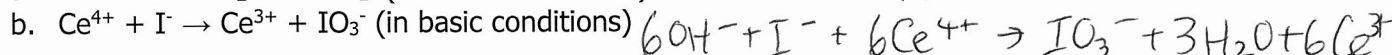
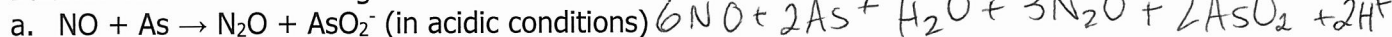


no - no oxidation number changes

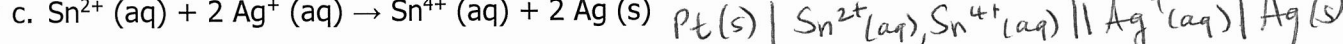
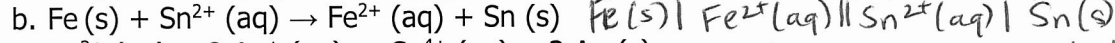
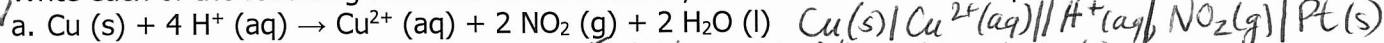
4. Balance each of the following half-reactions, then identify if it represents oxidation or reduction.



5. Balance each reaction using half-reactions.



6. Write each of the following reactions in cell notation, then determine the cell potential:



$E = 0.435\text{V}$
 $E = 0.304\text{V}$
 $E = 0.645\text{V}$

7. A galvanic cell is set up with tin (Sn²⁺ is the ion) and silver.

a. Write the two half-reactions involved, and identify the anode and cathode.

b. Write the overall reaction for the cell.

c. Calculate the net potential of the cell in standard conditions.

d. Fill in the diagram of the cell below.

