Week 10 Worksheet: Chapter 11 Redox Reactions

I. Acid-base solution/ Normality

(a) What volume of 1.00 M LiOH would be required to completely neutralize 75 mL of 1.50 M H_2SO_4?
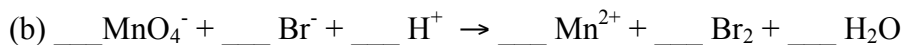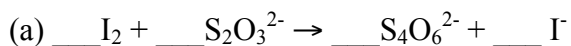
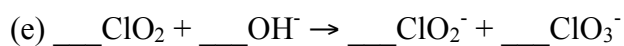(b) Calculate the normality for a solution with 255 g of H_3PO_4 in 3000 mL.
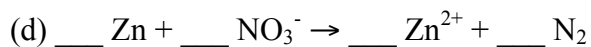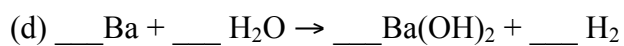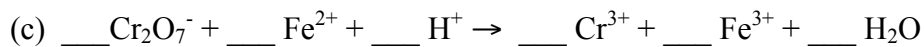
(c) What volume of 5 M sulfuric acid is required to prepare 850 mL of 0.75 N H_2SO_4?

(d) What is the normality of an NaOH solution if 25.7 mL of it react with 0.587 g of H_2CrO_4?

II. Oxidation-Reduction Reactions
Balance each reaction. For each equation, tell what is being oxidized and what is being reduced. For the last two reactions to be balanced correctly, you must add H^+, H_2O, or OH^-.

(a) ___I_2 + ___$S_2O_3^{2-}$ → ___$S_4O_6^{2-}$ + ___ I^-

(b) ___MnO_4^- + ___ Br^- + ___ H^+ → ___ Mn^{2+} + ___ Br_2 + ___ H_2O

(c) ___$Cr_2O_7^-$ + ___ Fe^{2+} + ___ H^+ → ___ Cr^{3+} + ___ Fe^{3+} + ___ H_2O

(d) ___Ba + ___ H_2O → ___$Ba(OH)_2$ + ___ H_2

(d) ___ Zn + ___ NO_3^- → ___ Zn^{2+} + ___ N_2

(e) ___ClO_2 + ___OH^- → ___ClO_2^- + ___ClO_3^-

III. Stoiciometry

(a) Calculate the normality of an HCl solution if 38.1mL of the solution reacts with 0.438 g of Na_2CO_3.
$$2HCl + Na_2CO_3 \rightarrow 2\ NaCl + CO_2 + H_2O$$

(b) What volume of 0.30 N NaOH is required to neutralize 100 mL of 0.57 N HNO_3?