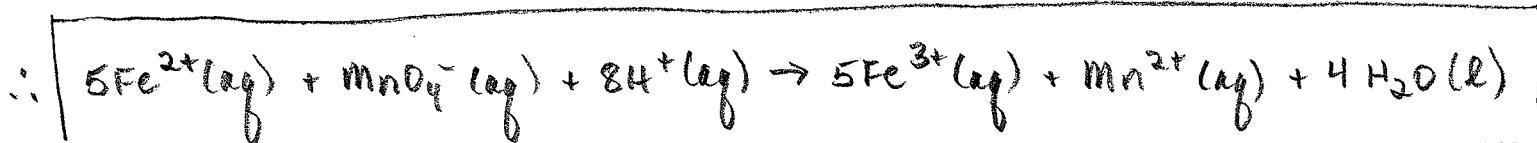
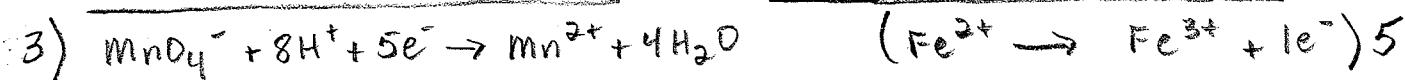
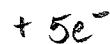
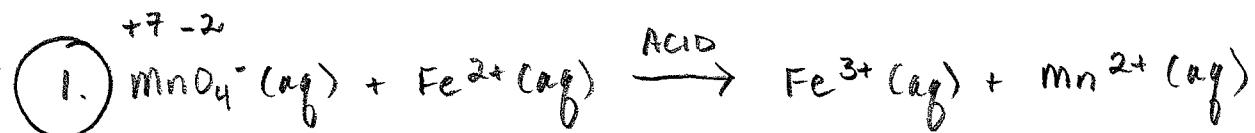


BALANCING REDOX EQUATIONS

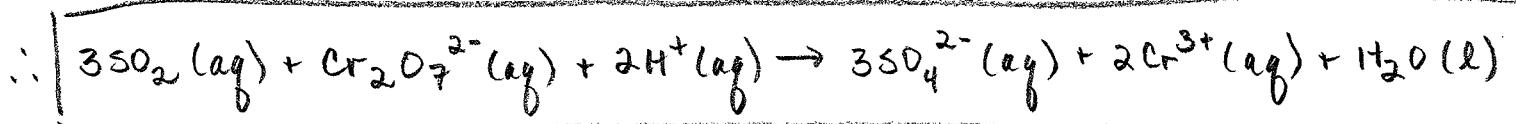
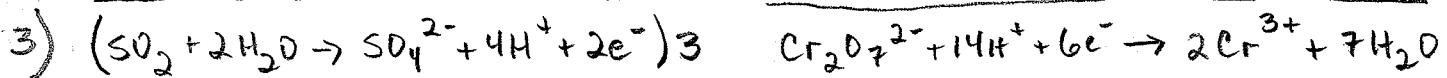
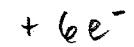
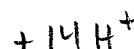
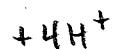
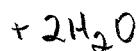
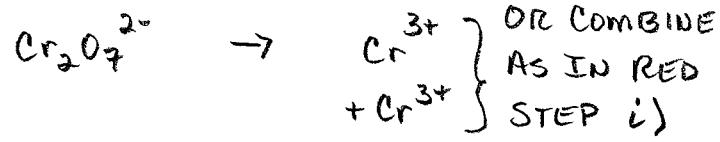
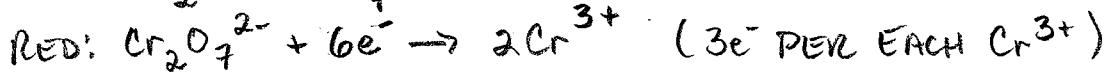
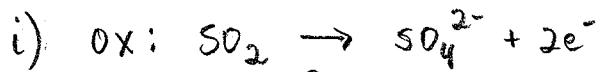
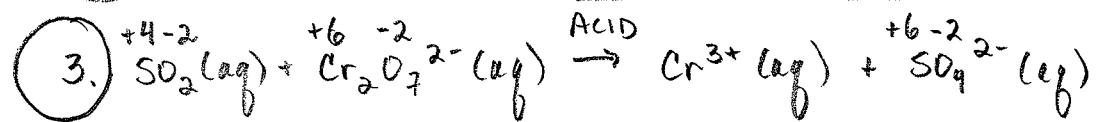
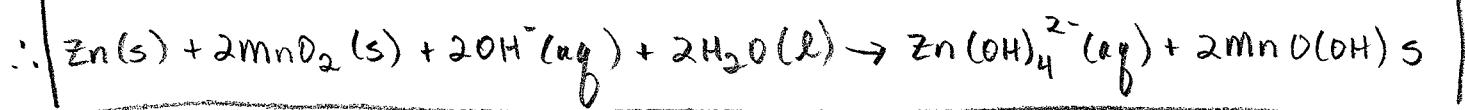
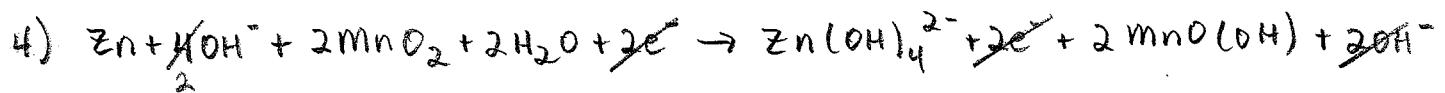
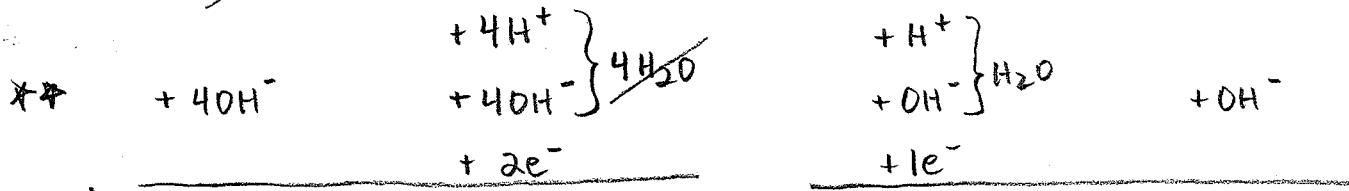
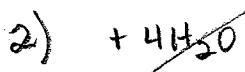
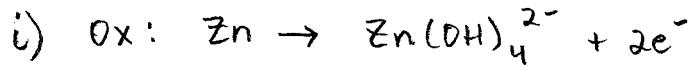
THE STEPS IN ALL EXAMPLES CORRESPOND WITH THOSE GIVEN IN THE TEXT. I PREFACE MY BALANCING BY ASSIGNING OXIDATION #S TO ALL SPECIES. YOU NEED NOT DO THIS, AND "BLINDLY" BALANCE CHARGES ON LEFT AND RIGHT BY ADDING e^- 'S AS REACTANTS OR PRODUCTS, HOWEVER IF YOU DO THIS YOU WILL NOT KNOW WHAT IS BEING OXIDIZED/REDUCED UNTIL STEP 4; YOU WILL NOT HAVE AN INTERNAL CHECK EARLY IN YOUR BALANCING TO TELL YOU IF SOMETHING IS AMISS, AND YOU WILL HAVE MORE DIFFICULTY RECOGNIZING DISPROPORTIONATION RXS.



NOTE: H^+ ON LEFT CONSISTENT WITH THIS TAKING PLACE IN ACIDIC AQUEOUS SOLUTION

* IF EVERYTHING IS ADDED UP AFTER THIS STEP, # ATOMS AND CHARGES BALANCE ON LEFT AND RIGHT OF EACH HALF REACTION

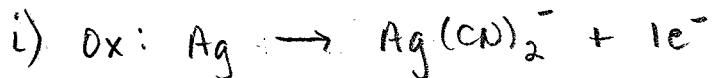
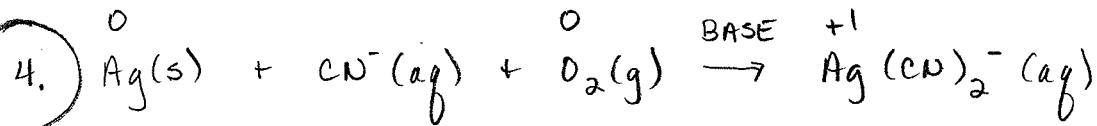
(2)



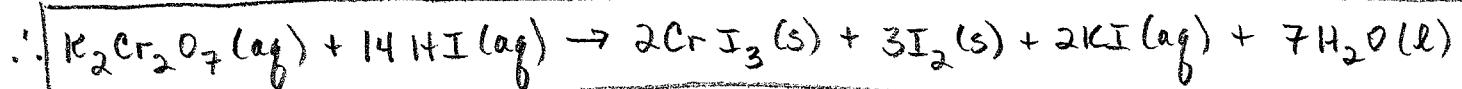
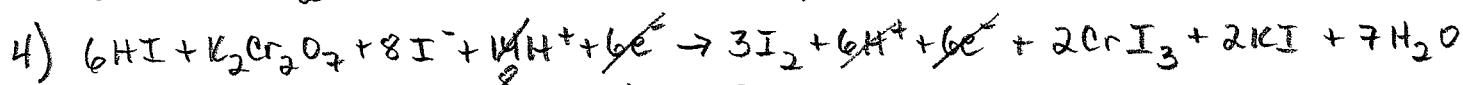
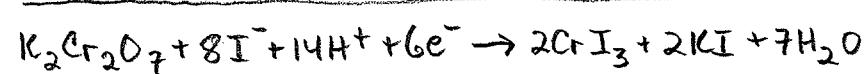
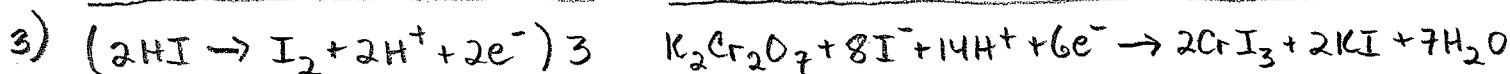
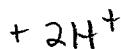
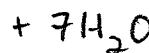
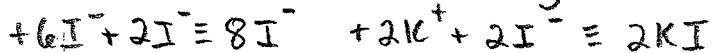
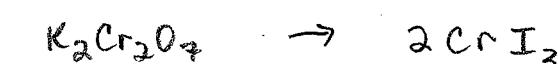
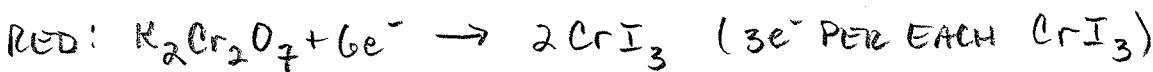
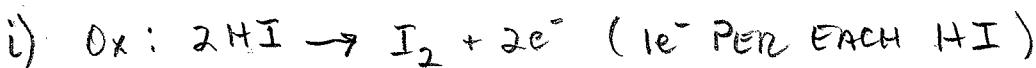
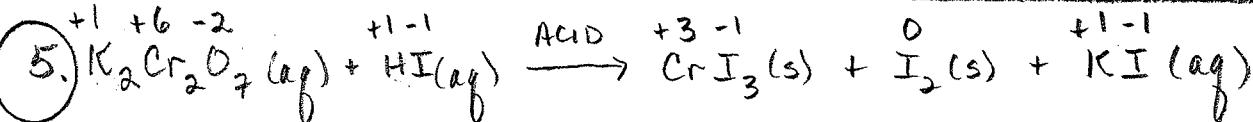
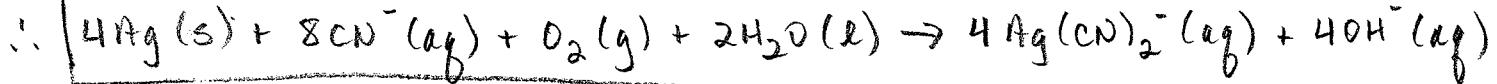
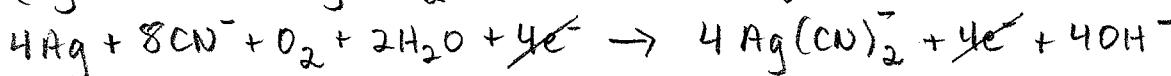
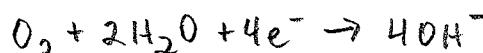
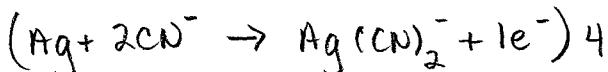
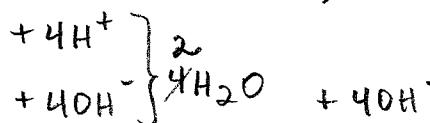
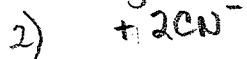
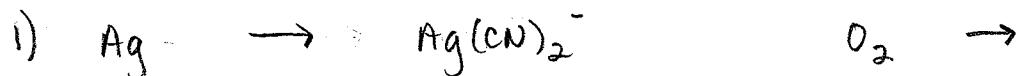
* H⁺ CANCELLED BY ADDING OH⁻ SINCE RX IS IN BASIC SOLN -

H⁺ + OH⁻ ≡ H₂O - YOU CAN ALSO DO THIS AT END AS IN TEXT

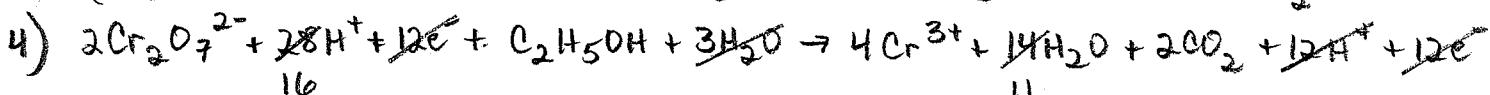
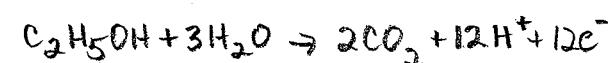
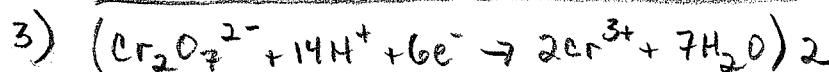
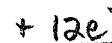
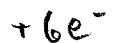
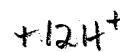
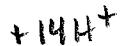
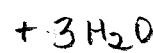
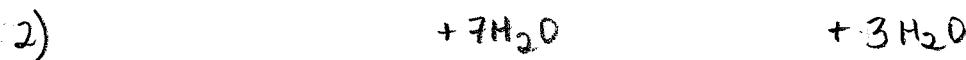
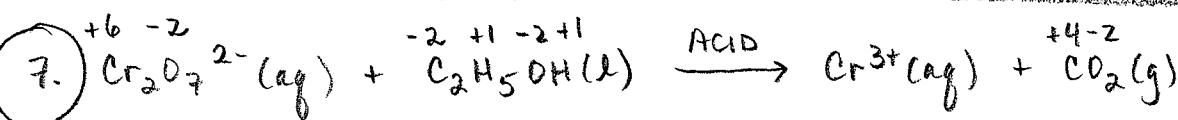
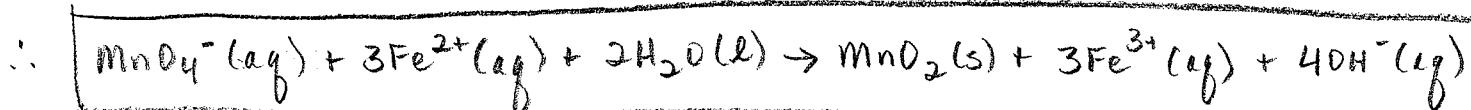
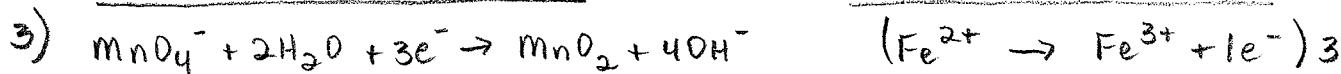
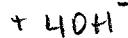
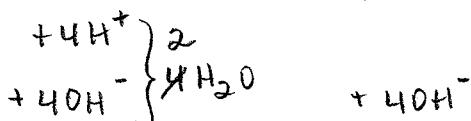
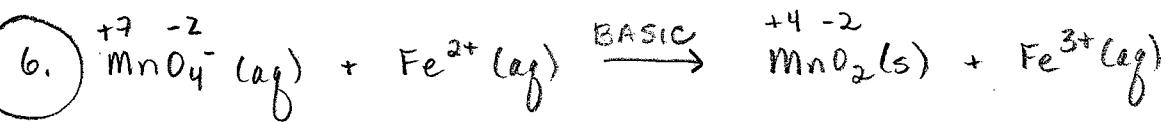
(3)



RED: $\text{O}_2 + 4\text{e}^- \rightarrow 2\text{H}_2\text{O}$ OR 2OH^- (2e^- PER EACH H_2O OR OH^-
BALANCING HALF REACTION WILL TELL WHICH FORMS)



4



11



BY NOW YOU MIGHT SEE A SHORTCUT - FOR EACH HALF REACTION
 JUST BALANCE THE ATOMS & # OF e⁻'s AND, IF NEUTRAL OR
 BASIC, ADD OH⁻ TO CANCEL H⁺ MAKING H₂O