Thermite Worksheet   Name _____

Chem 312

Consider the following "thermite" reaction:

$$2 \text{ Al (s)} + Fe_2O_3 \text{ (s)} \rightarrow Al_2O_3 \text{ (s)} + 2 \text{ Fe (s)}$$
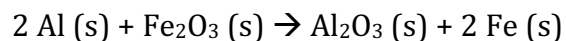
1) If 19 grams of aluminum were used in the reaction, how many grams of iron oxide are required to fully react with the aluminum?

2) The ΔH for this reaction (ΔH_{rxn}) is -852.5 kJ/rxn (as written). How many kJ of heat are released when 19 grams of aluminum reacts with a stoichiometric amount of iron oxide?

3) If this reaction was done underwater and the heat was released into the surrounding 5 liters of water, how hot would this water get assuming the initial temperature of the water was 25 °C?