Practice Questions: Factors Influencing Reaction Rate - Nature of Reactants - WS #4

1. Which one of the following reactions would you expect to be fastest at room temperature and why?

$$Pb^{2+}_{(aq)} + 2 Cl_{(aq)} \rightarrow PbCl_{2(s)}$$

$$Pb_{(s)} + Cl_{2(g)} \rightarrow PbCl_{2(s)}$$

2. Consider the following reactions. Which do you predict will occur most rapidly at room conditions? Slowest?

$$C_2H_{6 (g)} + O_{2 (g)} \rightarrow 2 CO_{2 (g)} + 3 H_2O_{(g)}$$

$$Fe_{(s)} + O_{2(g)} \rightarrow Fe_2O_{3(s)}$$

$$\mathrm{H_2O_{(l)}} + \mathrm{CO_{2\,(g)}} \rightarrow \mathrm{H_2CO_{3\,(g)}}$$

$$2 \text{ Fe}^{3+}_{(aq)} + \text{Sn}^{2+}_{(aq)} \rightarrow 2 \text{ Fe}^{2+}_{(aq)} + \text{Sn}^{4+}_{(aq)}$$