Solubility Problems

Consider three ionic solids
Calcium Chloride
Lead (II) Nitrate
Sodium Carbonate

Are they soluble? Insoluble? Slightly soluble?

What if you combined solutions of all three salts? What are the possible combinations and are they soluble, insoluble, or slightly soluble?

For any that are slightly soluble or insoluble salts, write the solubility equilibrium reaction and $K_{sp}$ expression. Look up the $K_{sp}$ values, if you have your book.

Choose one salt and calculate the solubility in mol L$^{-1}$ and g L$^{-1}$
Precipitation?

Two solutions are mixed together:

100.0 mL of 0.10 M calcium chloride
+ 10.0 mL of 0.05 M sodium carbonate

Will a precipitate form? What is it? Confirm your prediction with a calculation.