What forms a precipitate?

Check each step, **in order**.

Solubility Rules you are responsible for.

		Soluble no precipitate	Insoluble forms precipitate
Step 1 ANIONS	Acetates (OAc^{1-} or $CH3COO^{1-}$) Nitrates (NO_3^{1-})	Always	Never
Step 2 CATIONS	Ammonium (NH_4^{1+}) Alkali metal (Na^{1+}, Li^{1+}, K^{1+}…) Acids (the ones we learned)	Always	Never
Step 3 ANIONS	Carbonates (CO_3^{2-}) Phosphates (PO_4^{3-})	Never	Always
Step 4 has exceptions ANIONS	Halogens (Cl^{1-}, Br^{1-}, I^{1-}, F^{1-})	Usually	Except: Ag^+, Hg_2^{2+} or Pb^{2+}
	Sulfates (SO_4^{2-})	Usually	Hg_2^{2+} or Pb^{2+} Sr^{2+}, Ba^{2+}
	Sulfides (S^{2-}) Hydroxy Salts (OH^{1-})	Except: Sr^{2+}, Ba^{2+}, Ca^{2+}	Usually

Hg_2^{2+}
mercury (I) ion

Hg^{2+}
mercury (II) ion

If you remember 1-3 you'll be good 85% of the time
If you remember 1-3 and 4 you'll be good 95%
Remembering the exceptions isn't that hard
— there's only six ions that cause exceptions
and lead, mercury, and silver are the most commonly encountered ones.