ICE Table Steps

1) Make a chart with rows for: **Rxn, I, C, E, 5%, Ans.**
2) Draw your ICE table with enough columns for each substance
   - *Put dashes in the table for solids/liquids since they will not have [ ]'s*
3) **Rxn -** Write the balanced eq. for your reaction.
4) **I -** Write in any initial [ ]'s you are given.
5) **C -** Use the generic value of "x" to list the changes to the concentrations
   - *Make sure to include the coefficients from the balanced equation. Example: $2H_2$ would be 2x.*
   - *Use (-) for anything being used up, and (+) for anything being made. If the $2H_2$ is being used up then it would be -2x.*
6) **E -** Add the initial and change columns together and list as the equilibrium [ ]s for each substance.
7) **5% -** Determine if the 5% rule can be applied. If 5% rule is a possibility adjust your E values and write them in the 5% row of your chart.
   - *Required: K < 1*
   - *K being at least 1000x smaller than initial [ ]'s is a better guess of when it might be a valid rule, but it's just a guess.*
   - *Remember you must check to see if the 5% rule was valid or not when you are finished! If it wasn't valid then you need to start over without it and do the math with the original "E" values.*
8) Write the Equilibrium Expression (Law of Mass Action) so you can plug in your values to solve for X.
   - *You may have to use the quadratic equation to solve! If you are lucky it will just be regular old algebra. Remember the "F.O.I.L" method and the quadratic equation* $\frac{-b\pm\sqrt{b^2-4ac}}{2a}$ *where your equation is* $ax^2 + bx + c$
9) **Ans. –** Use your answer for X to determine your final concentrations at equilibrium. List in the answer row of your ICE table.
   - *Don't forget that X is not necessarily your equilibrium concentration! You must go back and use X to solve for your equilibrium concentrations.*

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