

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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