

Creating Chemistry 534 Programs For TI-86

1. First you need to figure out a formula for whatever you want to obtain.

Example

Let's say that you want to get K_A from a given pH and the initial concentration of a weak acid.

Let I = initial concentration of acid

	$HA_{(aq)}$	=	$H^+_{(aq)}$	$A^-_{(aq)}$
Initial(moles/L)	I		0	0
Reacting/forming (moles/L)	x		x	x
equilibrium(moles/L)	I - x		x	x

$$K_A = x^2 / (I - x)$$

But $x = [H^+_{(aq)}] = 10^{-pH}$, so :

$$K_A = (10^{-pH})^2 / (I - 10^{-pH})$$

2. Get your calculator to ask you for "I "and pH="p". Then type in your formula and you're done.
 - To enter a program, press **PRGM** and "edit"
 - To get commands like "prompt", "disp", press **PRGM** and select I/O, and then choose from the list.

```
program KA
: prompt I, p
: 10^(-2p) / (I - 10^(-p)) → K
: disp K
```

To get "→", press the **STO→** button on the lower left-hand side of your pad.