

TI-92/TI-89* Acid-Base Equilibrium Programs

*I personally haven't tried it on a TI-89, but I think it should work. I know it works for the TI-92

Note: The first two lines and the last line of each program automatically appear in the program editor.

WEAK

```
PROGRAM  
NAME=WEAK
```

```
:weak()  
:Prgm  
:Prompt K  
:Prompt A  
:10^-14→W  
:zeros(x^3+K*x^2-(W+K*A)*x-K*W,x) | x>0→H  
:Disp "pH=", -log(H)  
:EndPrgm
```

BUF

```
PROGRAM  
NAME=BUF
```

```
:buf()  
:Prgm  
:Prompt K  
:Prompt A  
:Prompt B  
:10^-14→W  
:zeros(x^3+(B+K)*x^2-(W+K*A)*x-K*W,x) | x>0→H  
:Disp "pH=", -log(H)  
:EndPrgm
```

TITRATE4

```
PROGRAM  
NAME=TITRATE4
```

```
:titrate4()  
:Prgm  
:Input "ACID CONC, M", A
```

```
:Input "ACID VOL, mL",V
:Input "BASE CONC, M",B
:Input "BASE VOL, mL",U
:Input "KA",K
:A*V/(U+V)→C
:B*U/(U+V)→D
:10^-14→W
:zeros(x^3+(D+K)*x^2+(K*D-W-K*C)*x-K*W,x) | x>0→H
:Disp "pH=", -log(H)
:EndPrgm
```