

Integral Estimating Program

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PROGRAM:SUMS
:Input "A=",A
:Input "B=",B
:Input "N=",N
:0>L
:0>R
:0>M
:A>X
:(B-A)/N>D
:1>K
:Lbl C
:L+Y1*D>L
:X+D/2>X
:M+Y1*D>M
:X+D/2>X
:R+Y1*D>R
:K+1>K
:If K≤N
:Goto C
:fnInt(Y1,X,A,B)→J
:ClrHome
:Output(1,1,"LFT=")
:Output(1,5,L)
:Output(2,1,"RGT=")
:Output(2,5,R)
:Output(3,1,"AVG=")
:Output(3,5,(L+R)/2)
:Output(4,1,"MID=")
:Output(4,5,M)
:Output(5,1,"XCT=")
:Output(5,5,J)
:Output(6,1,"SIM=")
:Output(6,5,((R+L)/2+2*M)/3
```

This program estimates areas using using left-handed (LFT), right-handed (RGT) and mid-point (MID) Rectangles, as well as Simpson's Rule (SIM) . It also computes the trapezoidal approx (AVG) and the "exact" answer by the using the calculator's `fnInt`. It should work on any TI graphing calculator with only minor changes. The function should be entered into the `y1` variable on the TI85/86, and into the `Y1` variable on the TI82/83 (using `Y=` key). Programming words such as `Disp`, `Goto`, `Lbl`, `Input` should be entered from the `PRGM` menus `I/O` or `CTL` provided. The symbols \leq and $=$ can be gotten from the `TEST` menu. The variable `Y1` is gotten from the `Y-VARS` menu. The variable `X` (`x` on the TI85/86) can be gotten by pressing the `x-VAR` key on either calculator. Also on the TI85/86, the command `ClrHome` (which clears the screen) should become `CLLCD`. Finally, the `Output(row, col, item)` (`Outpt` on 85s) command produces output where you want it. These commands come from the `I/O` menu.