

TI-85 Program for Riemann Sums
Math 142 - Spring Semester 1997
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1. :Disp "Enter f(x)"	Display the prompt to enter the function.
2. :InpSt FUNCTION	Command InpSt for accepting function input as a string.
3. :St►Eq(FUNCTION,y50)	Command St►Eq converts the "string" function to a "real" function.
4. :Disp "Enter a"	Display the prompt to enter the left endpoint a.
5. :Input A	Command Input accepts the value a for the variable A.
6. :Disp "Enter b"	Display the prompt to enter the right endpoint b.
7. :Input B	Command Input accepts the value b for the variable B.
8. :Disp "Enter n"	Display the prompt to enter the number of subintervals n.
9. :Input N	Command Input accepts the value n for the variable N.
10. :(B-A)/N→D	Calculating the value of Δx and assigning it to the variable D.
11. :A→x	Setting the initial value of x at the left endpoint a.
12. :0→L:0→M:0→R:0→T:0→S	Initializing the values of L, M, R, T, and S.
13. :1→I	Starting the I-loop by setting I=1 (first subinterval).
14. :Lbl LOOP	Establishing a label for the main program loop (for Goto).
15. :L+y50*D→L	Multiplying f(left endpoint) by Δx and adding to previous L total.
16. :x+D/2→x	Changing the value of x to the midpoint of the subinterval.
17. :M+y50*D→M	Multiplying f(midpoint) by Δx and adding to previous M total.
18. :x+D/2→x	Changing the value of x to the right endpoint of the subinterval.
19. :R+y50*D→R	Multiplying f(right endpoint) by Δx and adding to previous R total.
20. :If I=N	Testing to see if you should stop the loop (stop when I=N).
21. :Goto FINISH	If I=N, then go to the "end game" and display results.
22. :I+1→I	Otherwise, increment I by 1 to go to the next subinterval.
23. :Goto LOOP	Then, go back to the beginning of the LOOP (nine steps above).
24. :Lbl FINISH	This is the end game, where L, M, R, T, and S are displayed.
25. :Disp "Left="	Simply printing on the screen the fact that you will print L.
26. :Disp L	Actually displaying the value of L calculated by the program.
27. :Disp "Middle="	Simply printing on the screen the fact that you will print M.
28. :Disp M	Actually displaying the value of M calculated by the program.
29. :Disp "Right="	Simply printing on the screen the fact that you will print R.
30. :Disp R	Actually displaying the value of R calculated by the program.
31. :Pause	Stopping the program, because the Home Screen is full.
32. :CILCD	Command to clear the screen (otherwise R stays on the screen).
33. :T=(L+R)/2	Calculation of the trapezoidal rule approximation T.
34. :Disp "Trap="	Simply printing on the screen the fact that you will print T.
35. :Disp T	Actually displaying the value of T calculated by the program.
36. :S=(2M+T)/3	Calculation of the Simpson's rule approximation S.
37. :Disp S	Actually displaying the value of S calculated by the program.

Note: The symbol → represents STO► on the calculator, but it appears as → on the edit screen.

Note: This program may be transferred from my calculator to yours!

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