Here's how to get the program into your TI-83 or TI-84:

press PRGM

choose NEW, press ENTER

type in the name of your program: RIEMANN

Press ENTER

**RIEMANN SUM PROGRAM -- GIVES LEFT, RIGHT, AND MIDPOINT SUMS**

**TI-83 OR 84.**

To get Disp and Prompt, press PRGM, right arrow to I/O, choose what you want.

Use 2nd A-LOCK to lock the calculator in alphabet mode.

0 means zero.

ü means STO

To get For, End, and Stop, press PRGM, choose the right thing.

Get Y**1** by pressing VARS, right arrow to Y-VARS, choose 1:Function, then choose Y1.

If you get messed up partway through the program, press 2nd QUIT to get back to the home screen, then press PRGM and choose EDIT and RIEMANN.

:Disp "ENTER YOUR FN"

:Disp "IN Y 1"

:Disp "HOW MANY"

:Disp "RECTANGLES?"

:Prompt N

:Disp "LEFT BOUND OF X?"

:Prompt A

:Disp "RIGHT BOUND OF X?"

:Prompt B

:0üS

:(B-A)/NüD

:For(I,0,N-1)

:S+D\*Y**1**(A+I\*D)üS

:End

:Disp "LEFT HAND SUM"

:Disp S

:0üS

:For(I,1,N)

:S+D\*Y**1**(A+I\*D)üS

:End

:Disp "RIGHT HAND SUM"

:Disp S

:0üS

To run the program, press PRGM, choose RIEMANN, press ENTER twice (once to choose, again to run).

To test your program, enter y1 = x2 in your calculator, then run the program for a Riemann sum with 30 rectangles, from x = 1 to x = 5:

L30 = 39.74518519...

R30 = 42.94518519...

M30 = 41.32740741...

:For(I,0,N-1)

:S+D\*Y**1**(A+.5D+I\*D)üS

:End

:Disp "MIDPOINT SUM"

:Disp S

:Stop

Press 2nd QUIT to quit editing the program.

Here's how to get the program into your TI-85 or TI-86:

press PRGM

press F2 (Edit)

type in the name of your program: RIEMANN

Press ENTER

**RIEMANN SUM PROGRAM -- GIVES LEFT, RIGHT, AND MIDPOINT SUMS**

**TI-85, TI-86**

Disp "ENTER YOUR FN"

To get Disp and Prompt, press F3 (I/O), choose what you want.

To get For, End, and Stop, press PRGM, choose the right thing.

0 means zero.

ü means STO

Y**1** comes from 2nd Catlg-Vars MORE F4(EQN)

If you get messed up partway through the program, press 2nd QUIT to get back to the home screen, then press PRGM and choose EDIT and RIEMANN.

Press 2nd QUIT to quit editing the program.

To run the program, press PRGM, choose RIEMANN, press ENTER twice (once to choose, again to run).

Disp "IN Y 1"

Disp "HOW MANY"

Disp "RECTANGLES?"

Prompt N

Disp "LEFT BOUND OF X?"

Prompt A

Disp "RIGHT BOUND OF X?"

Prompt B

0üS

(B-A)/NüD

For(I,0,N-1)

A+D\*Iüx **This x is the x-var, not the letter X.**

S+D\*Y**1**üS

End

Disp "LEFT HAND SUM"

Disp S

0üS

For(I,1,N)

A+D\*Iüx

S+D\*Y**1**üS

End

Disp "RIGHT HAND SUM"

Disp S

0üS

For(I,0,N-1)

A+.5\*D+I\*Düx

S+D\*Y**1**üS

To test your program, enter y1 = x2 in your calculator, then run the program for a Riemann sum with 30 rectangles, from x = 1 to x = 5:

L30 = 39.74518519...

R30 = 42.94518519...

M30 = 41.32740741...

End

Disp "MIDPOINT SUM"

Disp S

Stop

Here's how to get the program into your TI-89 or TI-92:

press APPS

choose 7: Program Editor

choose 3: new

type in the name of your program as Variable: RIEMANN

Press ENTER

**RIEMANN SUM PROGRAM -- GIVES LEFT, RIGHT, AND MIDPOINT SUMS**

**TI-89, TI-92**

Riemann()

Prgm

Local N,A,B,D,S,I

Disp "ENTER YOUR FN"

Disp "IN Y 1"

Disp "HOW MANY"

Disp "RECTANGLES?"

Prompt N

Disp "LEFT BOUND OF X?"

Prompt A

Disp "RIGHT BOUND OF X?"

Prompt B

0üS

(B-A)/NüD

For I,0,N-1

S+D\*Y**1** (A+I\*D)üS

EndFor

Disp "LEFT HAND SUM"

Disp S

0üS

For I,1,N

S+D\*Y**1**(A+I\*D)üS

EndFor

Disp "RIGHT HAND SUM"

Disp S

0üS

For I,0,N-1

To test your program, enter y1 = x2 in your calculator, then run the program for a Riemann sum with 30 rectangles, from x = 1 to x = 5:

L30 = 39.74518519...

R30 = 42.94518519...

M30 = 41.32740741...

S+D\*Y**1**(A+.5D+I\*D)üS

EndFor

Disp "MIDPOINT SUM"

Disp S

EndPrgm