

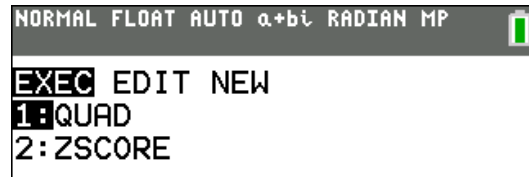
# Program QUAD on the TI-84+

Using the TI-84 Plus / TI-84 Silver Edition Color/ TI-83 Plus

The QUAD program will do two things:

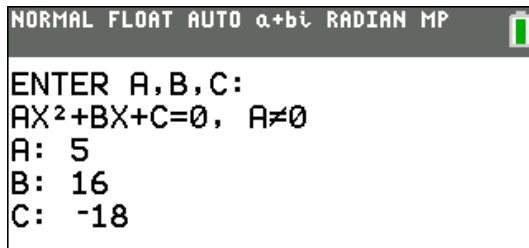
- 1) Output the **discriminant**, **axis of symmetry**, and solution(s) for  $x$
- 2) Display a graph and adjust the window.

Press the **[PRGM]** key to access the programs menu, select QUAD:

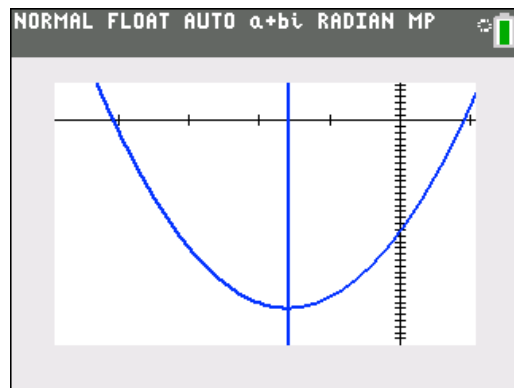
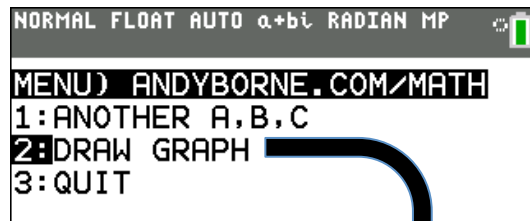
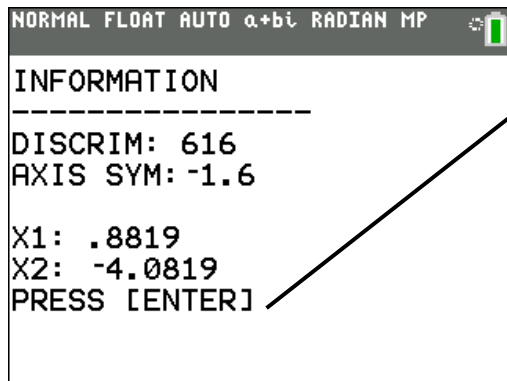


Find the solutions to the equation  $5x^2 + 16x - 18 = 0$

Coefficients are A, B, C or 5, 16, -18



After A,B, and C are entered, you will see a screen of information:



After pressing **[ENTER]** a menu will prompt you to draw the graph, restart entering A,B,C or quitting.

Drawing the graph adjusts the window so you don't have to!

The equation is put assigned to  $Y_3$ .

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PROGRAM: QUAD
: Lbl A0:ClrHome:a+bi
: Disp "ENTER A,B,C:"
: Disp "AX2+BX+C=0, A≠0"
: Repeat (A≠0)
: Input "A: ",A
: If A=0:Disp "A≠0"
: End
: Input "B: ",B
: Input "C: ",C
: B2-4AC→D: -B/(2A)→S
: ClrHome
: Disp "INFORMATION"
: Disp "-----"
: Output(3,1,"DISCRIM: ")
: Output(3,10,D)
: Output(4,1,"AXIS SYM:")
: Output(4,10,S)
: (-B+√(D))/(2A)→E
: (-B-√(D))/(2A)→F
: Output(6,1,"X1:")
: Output(6,5,round(E,4))
: Output(7,1,"X2: ")
: Output(7,5,round(F,4))
: Output(8,1,"PRESS [ENTER]
")
: {E,F}→Q:SortA(LQ)
: min(LQ)→E:max(LQ)→F
: "AX2+BX+C"→Y3
: Pause :ClrHome:Lbl B1
: Menu("MENU) ANDYBORNE.COM
/MATH","ANOTHER A,B,C",A0,
"DRAW GRAPH",A1,"QUIT",Q)
: Lbl A1
: If D<0:Then
: If A<0:Then
: -Y3(S)*.5→Ymax
: 1.2*Y3(0)→Ymin:End
: If A>0:Then
: -Y3(S)*.5→Ymin
: 1.2*Y3(0)→Ymax:End
: If S>0:Then
: -S→Xmin:2S→Xmax:End
: If S<0:Then
: 2S→Xmin: -S→Xmax:End
: If S=0:Then
: -10→Xmin:10→Xmax
: End:End
: "-----"
: If D>0:Then
: If S<0:Then
: -S*.2→Xmax
: S-2(S-E)→Xmin
: End
: If S>0:Then
: -S*.2→Xmin
: S+2(F-S)→Xmax
: End

```

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: If (E<0) and (F>0):Then
: 1.2*F→Xmax:1.2*E→Xmin
: End
: If A>0:Then
: Y3(S)*1.2→Ymin
: -Y3(S)*0.2→Ymax:End
: If A<0:Then
: -Y3(S)*0.2→Ymin
: Y3(S)*1.2→Ymax
: End:End
: "-----"
: If D=0:Then
: If E>0:Then
: 2E→Xmax: -.2*E→Xmin:End
: If E<0:Then
: 2E→Xmin: -.2*E→Xmax:End
: If A>0:Then
: 2Y3(0)→Ymax
: -.5Y3(0)→Ymin:End
: If A<0:Then
: -.5Y3(0)→Ymax
: 2Y3(0)→Ymin:End
: If E=0:Then
: √(10/A)*3→Xmax
: -√(10/A)*3→Xmin
: -10→Ymin:10→Ymax
: End:End
: "-----"
: FnOff :Vertical S
: If D<0:Horizontal Y3(S)
: DrawF Y3
: Pause :ClrHome
: Goto B1
: Lbl Q:ClrHome
: Disp "EQN IS IN Y3"
: FnOn

```

## CODE LISTING

Feel free to give this code  
out. Public Domain!!

Find this code file at  
<http://www.andyborne.com/math>

