Using the Program **QUAD2** (**TI86** and **TI85**) or **QUADRATC** (**TI82** or **TI83**)

Let's say we want to solve the equation $0 = 3x^2 + 5x - 6$. Recall the solutions to this equation are also the x-intercepts of the function $y = 3x^2 + 5x - 6$. This program will reinforce that idea.

On all calculators, press the **PRGM** button. It is located to the left and below the arrows.

On the **TI83** or **TI82**, you want to execute a program. So highlight **EXEC** at the top and highlight **QUADRATC** from the list. Press **ENTER**. This just puts the phrase "**prgmQUADRATC**" on the home screen. You need to press **ENTER** to run the program.

On the **TI86** or **TI85**, press **F1** for **NAMES**. Select **QUAD2**. This should put the phrase "**QUAD2**" on the home screen. Press **ENTER** to run the program.

When the program begins, the screen will look like the following.

GRAPHICAL
QUADRATIC
EQUATIONS

$AX^2 + BX + C = 0$

TO CONTINUE,
PRESS ENTER.

So press **ENTER** to start. Remember for the equation $0 = 3x^2 + 5x - 6$, we have $a = 3$, $b = 5$, and $c = -6$. Enter these values in at the prompts, pressing **ENTER** after each one. The program displays the discriminant. Notice it's positive which means there are two solutions to the equation and two x-intercepts of the graph $y = 3x^2 + 5x - 6$.

On the **TI83** or **TI82**, press **ENTER** like it says and you'll see the graph of $y = 3x^2 + 5x - 6$ and the solutions to the equation $0 = 3x^2 + 5x - 6$. Press **ENTER** again and it will tell you the vertex of the parabola. Press **ENTER** a third time and it gives you the option of solving another equation, tracing along the current graph, or quitting.

On the **TI86** or **TI85**, press **ENTER** like it says and you'll see the two solutions. Press **ENTER** again and it gives you the coordinates of the vertex. Press **ENTER** again and it shows you the graph of the corresponding function $y = 3x^2 + 5x - 6$. Press **ENTER** a fourth time and it gives you the option of solving another equation (**NEW**), tracing along the current graph (**TRACE**), or quitting (**QUIT**).