Use this Quadratic Function $f(x) = 2x^2 - 3x + c$

This quadratic passes through the point (-1,13).

Find c.

Replace x and y in the equation with the coordinates from the point and solve for c.

$13 = 2(-1)^2 - 3(-1) + c$

$13 = 2 + 3 + c$

$13 = 5 + c$

$c = 8$

Use this Quadratic Function $f(x) = -x^2 - bx + 4$

This quadratic passes through the point (5,-56).

Find b.

Replace x and y in the equation with the coordinates from the point and solve for b.

$-56 = -(5)^2 - b(5) + 4$

$-56 = -25 - 5b + 4$

$-56 = -5b - 21$

$+21 \quad +21$

$-35 = -5b$

$b = 7$

Find the quadratic function $y = ax^2 + c$ that passes through the given points: (2, -9) and (-3, -34)

Since there are two unknowns, a and c, you need two equations (System of Equations). Create two equations by taking each point and replacing x and y with the coordinates from each point.

Using (2, -9):

$-9 = a(2)^2 + c$

$-9 = 4a + c$

Using (-3,-34):

$-34 = a(-3)^2 + c$

$-34 = 9a + c$

using these 2 eq's solve the system using Substitution or elimination:

If use elimination:

$-9 = 4a + c$

$-34 = 9a + c$

$25 = -5a$

$-5 = a$

Substitute this value of a back into one of the eq's and solve for c:

$-9 = 4(-5) + c$

$-9 = -20 + c$

$+20 \quad +20$

$c = 11$

Given the quadratic function $y = ax^2 + bx + c$

How many points on the parabola would you need in order to write its equation?

Since there are three unknowns a, b, and c you need three equations, therefore, you would need three points.

You can now finish Hwk #10. Sec 5-2

Page 248.

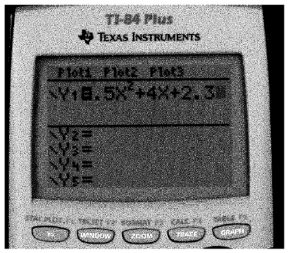
Problems 4, 11, 19, 28, 30, 37-39, 46, 48

Use the sheet I've printed out.

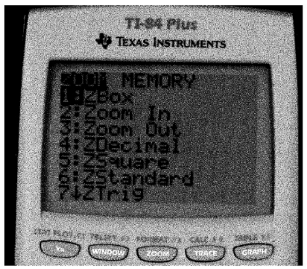
Finding the Max/Min using technology.

$$y = \frac{1}{2}x^2 + 4x + 2.3$$

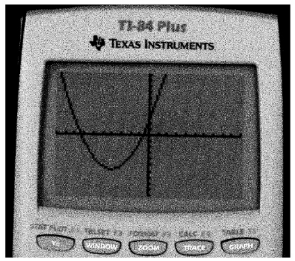
Step 1: Press Y= and enter this equation into one of the rows



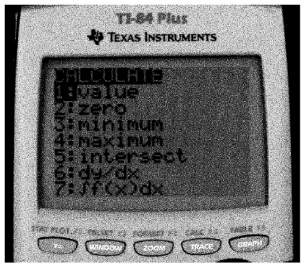
Step 2: Press Zoom and choose Option 6:ZStandard to get what is called a Standard Window. This means x and y will go from -10 to 10



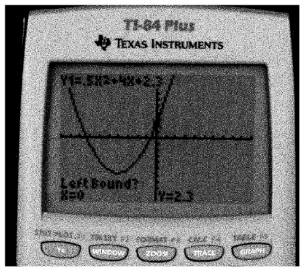
After this step you will see the following graph on your calculator.



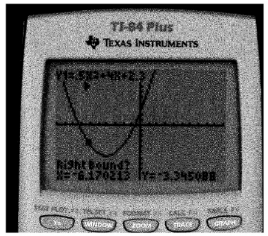
Step 3: Press 2ND then TRACE Choose Option 3:minimum because this parabola opens up.



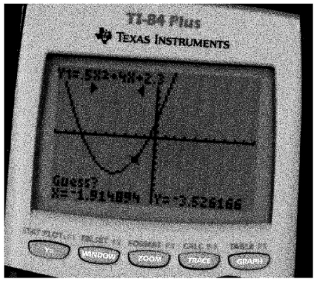
You will now see the following screen.



Step 4: Now move the cursor to the left of the minimum. Make sure that it is to the left but don't go too far. Once the cursor is to the left of the minimum press ENTER and you will see the following screen.



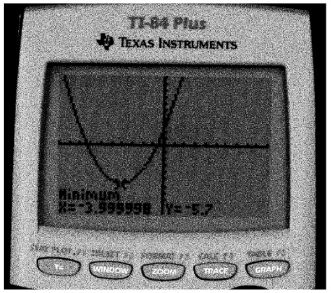
Step 5: Now move the cursor to the right side of the minimum,thus, surrounding the minimum. Press ENTER and you'll see the following screen.



Step 6: Guess essentially asks you to move the cursor closer to the point that you are trying to find. Once you've moved the cursor closer to the minimum press ENTER and you'll see the following screen:

The calculator uses a numerical approach to find the minimum which means that sometimes the coordinates won't be the exact values but should round to be the coordinates you'd get by another method.

Minimum is the point (-4,-5.7)



Vertex Form $y = a(x-h)^2 + k$	Standard Form $y = ax^2 + bx + c$
1. Find Vertex: (h,k)	1. Find LOS: $x = \frac{-b}{2a}$
2. LOS: x=h	2. Find Vertex: (x, y) LOS — Plug LOS into eq
3. y-int: make x=0 and find y.	3. y-int: make x=0 → C
4. Graph: Plot vertex then Use a or Use a Table	4. Graph: Plot vertex then Use a or Use a Table

Sec 5-4: Factoring

Step 1: GCF

Step 2:

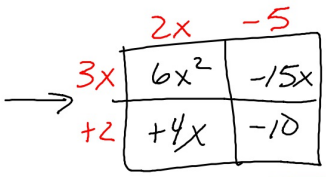
- If a binomial look to continue factoring using difference of perfect squares.
- If a trinomial factor using X and the Box.
- If four terms factor using the Box. Also look to see if the factors from the box can be factored further.

Factor completely. $54x^3 - 99x^2 - 90x$

1st GCF = $9x$

$9x(6x^2 - 11x - 10)$

2nd



$9x(2x-5)(3x+2)$