

Unit 7: Graphing 2nd degree
Equation of the form $y = ax^2 + bx + c$

the 'b' parameter is our

~~horizontal translation~~

(and also ~~is~~ affects the vertical translation)

• when b is negative, the graph moves to the left

• when b is positive, the graph moves to the right

has
left
left

graph: $y = x^2 + 5 - 6x$ and
list the 5 characteristics

Step ①: find the

vertex

$a = 1$

$b = -6$

$c = 5$

$V\left(\frac{-b}{2a}, \frac{-\Delta}{4a}\right)$

$V\left(\frac{-(-6)}{2(1)}, \frac{-16}{4(1)}\right)$

$\Delta = b^2 - 4ac$

$\Delta = (-6)^2 - 4(1)(5)$

$\Delta = 16$

$V(3, -4)$

Step ②: Construct

table of value \bar{w}

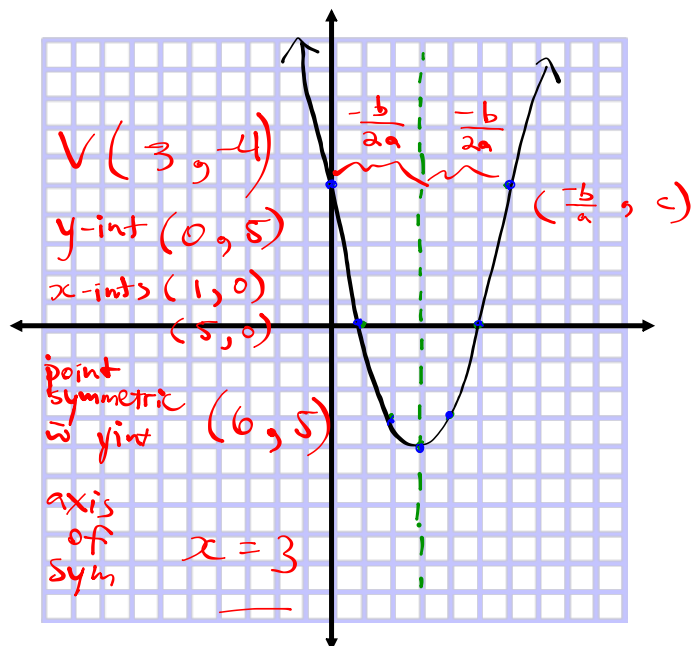
vertex in middle

pick x values around vertex

$y = x^2 - 6x + 5$

h	x	y
1	1	$(1)^2 - 6(1) + 5 = 0$
2	2	$(2)^2 - 6(2) + 5 = -3$
3	3	-4
4	4	$(4)^2 - 6(4) + 5 = -3$
5	5	$(5)^2 - 6(5) + 5 = 0$

Step ③: Plot points!



graph $y = 4x^2 - 8x + 3$ and give
5 characteristics

$$y = -3x^2 + 2x + 1$$



point symmetric
w/ y-axis

Unit 8 : Word Question Involving
a max or min point (and more)
 (aka vertex)

P.1 / 8.1

The orchard's yield as a
 "is determined by" function of the # of trees added

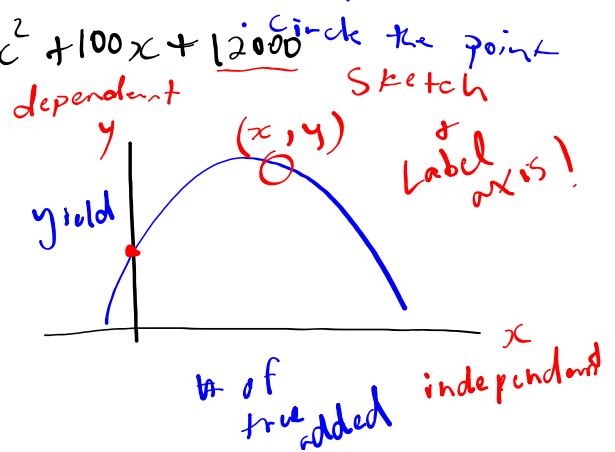
is represented by : $y = -10x^2 + 100x + 12000$

How many trees should the friendly farmer add to maximize his yield?

Find the coordinates.
 (only the x coordinate is necessary)

Strategy:

- Translate the question into a point on the graph.



P 8.6 ~~1~~ 1
How high above the ground were you
when you threw the object?

zeros = x-ints = solutions

