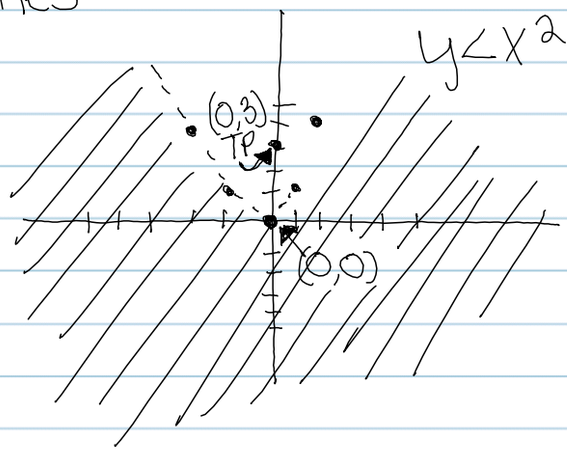
Algebra 2 Hnrs 4/25/11

Graphing Linear Inequalities

$y = x^2$

$y = x^2 + 0x + 0$

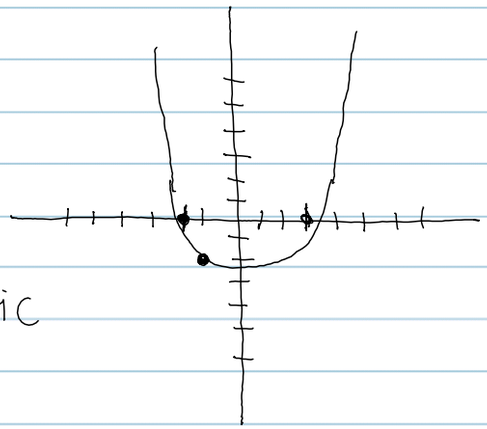
$\frac{-b}{2a}$



is $3 < 0^2$?
NO
shade ↓

Modeling Quadratic Functions

(-2,0) (-1,-2) (3,0)



Step 1: substitute the x and y values into the standard form of a quadratic function. Do this for each point

$y = ax^2 + bx + c$

① $0 = a(-2)^2 + b(-2) + c \Rightarrow 4a - 2b + c = 0$
② $-2 = a(-1)^2 + b(-1) + c \Rightarrow a - b + c = -2$
③ $0 = a(3)^2 + b(3) + c \Rightarrow 9a + 3b + c = 0$

$$4a - 2b + c = 0$$
$$a - b + c = -2$$
$$9a + 3b + c = 0$$

Step 2: Solve the system of equations for each variable

$$4a - 2b + c = 0$$
$$-4a + 4b - 4c = 8$$
$$2b - 3c = 8$$

NEXT page

Lalime A3 :(

Continued...

$(2b-3c=8)-6$

$12b-8c=18$

$-9a+9b-9c=18$

$9a+3b+c=0$

$12b-8c=18$

$-12b+18c=-48$

$12b-8c=18$

$10c=-30$

$\frac{10c}{10}=\frac{-30}{10}$

$c=-3$

$2b-3(-3)=8$

$2b+9=8$

$-9 \quad -9$

$\frac{2b}{2}=\frac{-1}{2}$

$b=-\frac{1}{2}$

$a+\frac{1}{2}-3=-2$

$a-2.5=-2$

$+2.5 \quad +2.5$

$a=\frac{1}{2}$

$a=\frac{1}{2}$

$b=-\frac{1}{2}$

$c=-3$

Step3: Now write the equation in standard form

$y=\frac{1}{2}x^2-\frac{1}{2}x-3$

notes done by:

Chapter 6.1

Rules/properties of Exponents

may 1

$a^N \cdot a^M = a^{N+M}$ — product of a power

$10^3 \cdot 10^5 = 10^8$

$x^3 \cdot x^4 = x^7$

$(a^M)^N = (5^3)^2 = 5^6$ — power of a power

$(ab)^m = a^m \cdot b^m$ — power of product

$(xy)^4 = x^4 \cdot y^4$

$(24)^3 = 6^3 \cdot 4^3$ (any factors of 24)

★ $a^{-m} = \frac{1}{a^m}$ — negative exponent property

$\frac{1}{a^{-m}} = a^m$

$\frac{x^3 y^4 z^{-2}}{k^{-4} o^5} = \frac{x^3 y^4 k^4}{z^2 o^5}$

$\frac{a^N}{a^m} = a^{N-m}$ — Quotient property

(do seperately) $\left[\frac{x^{-3}}{x^2}\right]\left[\frac{k^3}{k^1}\right]\left[\frac{z^{-2}}{z^2}\right] =$