

Quadratics

$Y = ax^2 + bx + c$ {standard} $X = \frac{-b}{2a}$, plug back in for y

$Y = a(x-h)^2 + k$ {vertical form} (h,k) is vertex

linear / quadratic systems

-a : opens down "y is maximum"

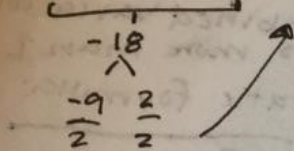
a : opens up "y is minimum"

know factoring {all types}

ex. $49x^2 - 100$ $(7x-10)(7x+10)$

ex. $x^2 + 11x - 26$ $(x-2)(x+13)$

ex. $2x^2 - 7x - 9$ $(2x-9)(x+1)$



- plug into

$Y_1 =$
 $Y_2 =$

- look at table values to find intersection pt.(s)



Geometric Transformations

Translation "slide" $(x, y) \rightarrow (x \pm \#, y \pm \#)$

dilation "reduces or enlarge" $(x, y) \rightarrow (kx, ky)$

not an isometry
b/c size shape not preserved

rotation rules $\rightarrow 90^\circ (x, y) \rightarrow (-y, x)$

$180^\circ (x, y) \rightarrow (-x, -y)$

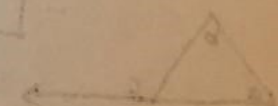
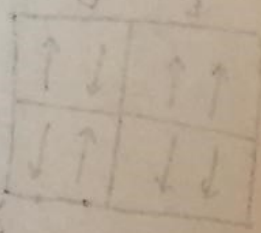
$270^\circ (x, y) \rightarrow (y, -x)$

reflection rules \rightarrow x-axis (flips)

$(x, y) \rightarrow (x, -y)$

y-axis
 $(x, y) \rightarrow (-x, y)$

$y=x$
 $(x, y) \rightarrow (y, x)$



$d/p = c$

sum of angles = 180

growth area $p < 1$

$Y = 100^x$