What are the parents graphs to these functions?

What are possible y= equations for each graph?

How many solutions does the parabola have? the absolute value?

What is the solution to this system of equations?

What are the solutions to the system of inequalities?

What are the domain and ranges of these functions?

What are the vertices?

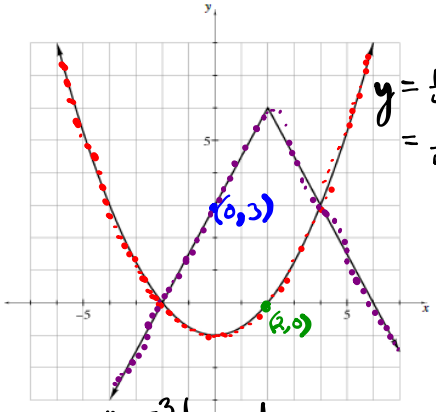
What are the y-intercepts? x-intercepts?

What are the solutions to the inequality?

What are the solutions to the equation?

What are the equations of the graphs?

tHE VERTEX OF THE PARABOLA IS AT ZERO NEGATIVE



$y = \frac{-3}{2}|x-2|+6$

Parabola:

$y = x^2$

$y = a(x-h)^2+k$

$y = a(x-0)^2-1$

$0 = a(2-0)^2-1$

$1 = 4a$

$\frac{1}{4} = a$

$y = \frac{1}{4}(x-0)^2-1$

$= \frac{1}{4}x^2-1$

Absolute:

$y = |x|$

$y = a|x-h|+k$

$y = a|x-2|+6$

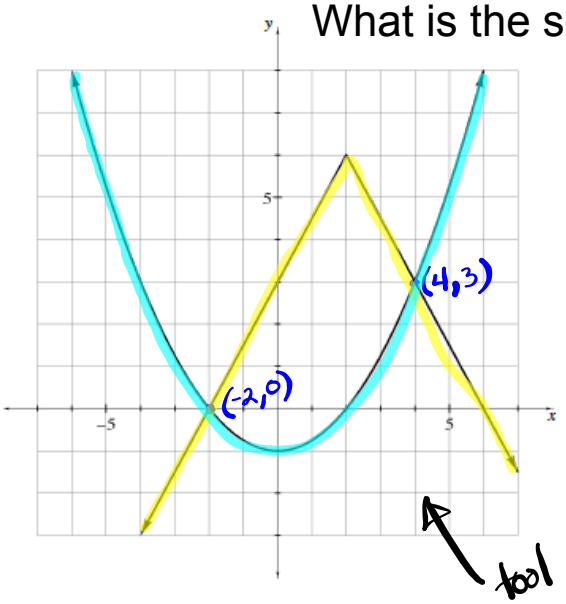
$3 = a|0-2|+6$

$-6 \quad -6$

$-3 = 2a$

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

What is the solution to the equation?



tool

$\frac{1}{4}x^2-1=-\frac{3}{2}|x-2|+6$

$y=\frac{1}{4}x^2-1$ $y=-\frac{3}{2}|x-2|+6$ ← a strategy

$x=-2$ and $x=4$

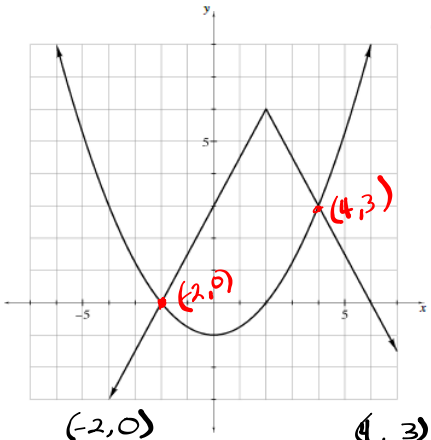
$\frac{1}{4}(-2)^2-1=-\frac{3}{2}|-2-2|+6$

$1-1=-\frac{3}{2}\cdot\frac{4}{1}+6$

$0=-6+6$

$0=0$ ✓

What is the solution to this system of equations?



$y=-\frac{3}{2}|x-2|+6$

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

$(-2,0)$ and $(4,3)$

$(-2,0)$

$0=-\frac{3}{2}|-2-2|+6$

$0=-6+6$

$0=0$ ✓

$0=\frac{1}{4}(-2)^2-1$

$0=1-1$

$0=0$ ✓

$(4,3)$

$3=-\frac{3}{2}|4-2|+6$

$3=-\frac{3}{2}\cdot\frac{2}{1}+6$

$3=-3+6$

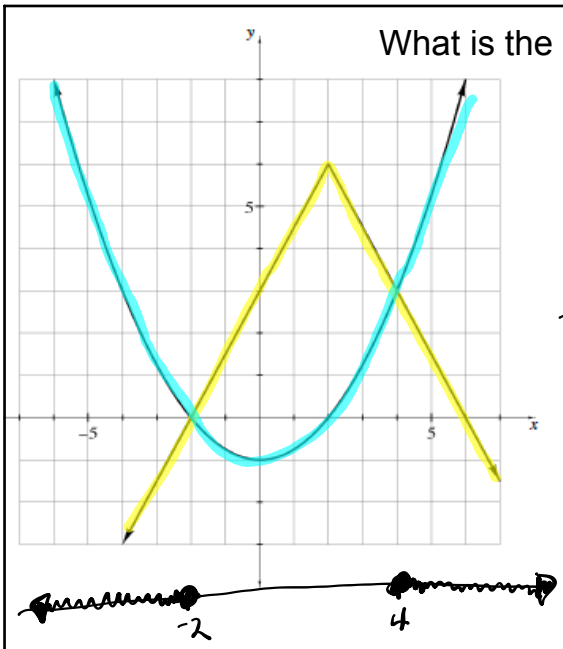
$3=3$ ✓

$3=\frac{1}{4}(4)^2-1$

$3=\frac{16}{4}-1$

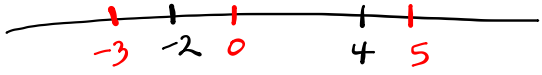
$3=3$ ✓

What is the solution to an inequality?



Boundary Points

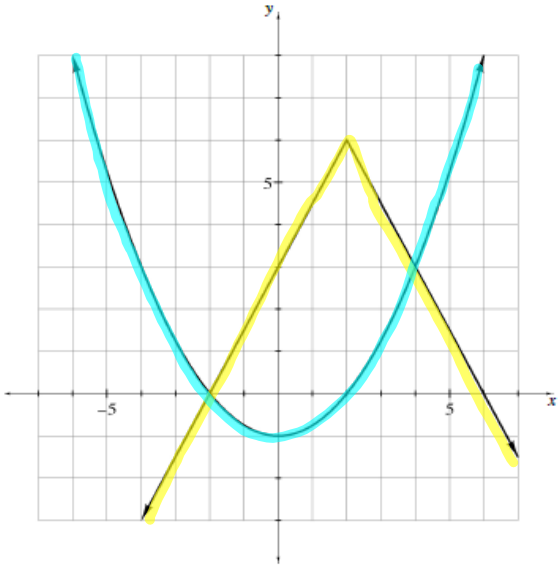
$\frac{1}{4}x^2 - 1 \geq -\frac{3}{2}|x-2|+6$



True $-1 \geq 3$ True

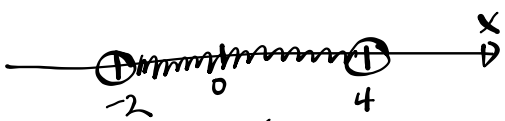
False

What is the solution to an inequality?



$\frac{1}{4}x^2 - 1 < -\frac{3}{2}|x-2|+6$

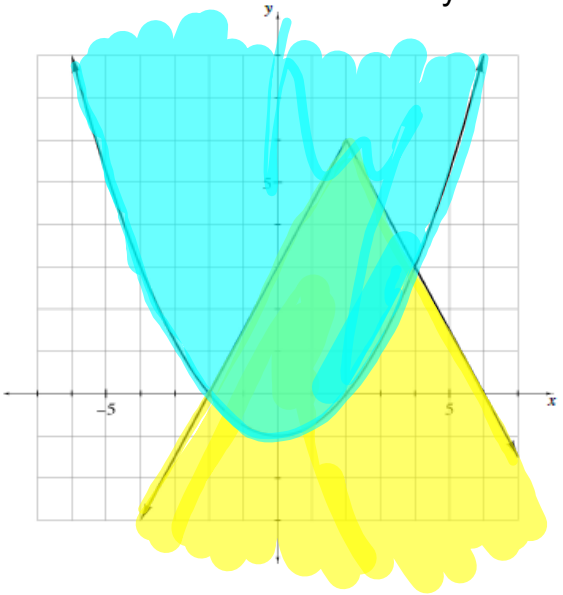
blue values below yellow



$-1 < 3$

True.

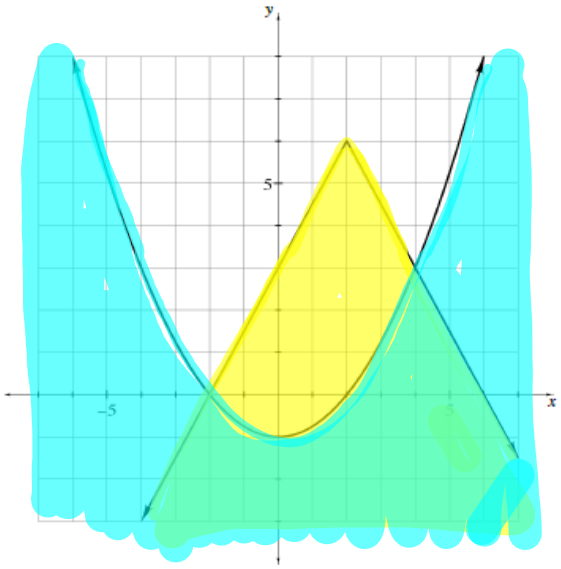
What is the solution to a system of inequality?



$y \leq -\frac{3}{2}|x-2|+6$

$y \geq \frac{1}{4}x^2 - 1$

= solutions



$y \leq -\frac{3}{2}|x-2|+6$

$y \leq \frac{1}{4}x^2 - 1$