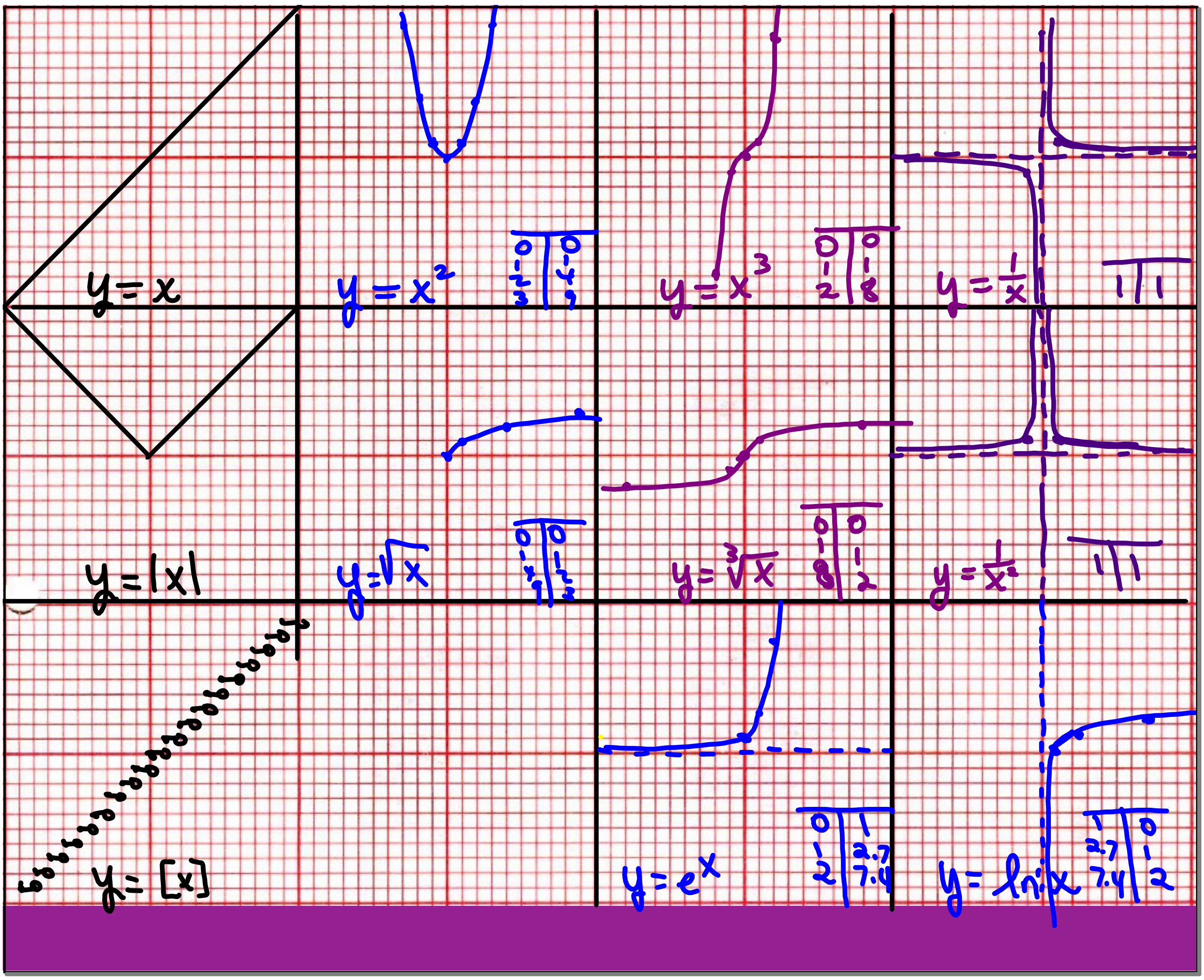
August 29, 2023



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Even $f(-x)=f(x)$ y-axis

odd $f(-x)=-f(x)$ origin

$y=-3\sqrt{x+4}-2$

left 4, Down 2

0	0
1	$\cancel{1}$ -3
4	$\cancel{2}$ -6
9	$\cancel{3}$ -9

$y=\sqrt{5-x}=\sqrt{-(x-5)}$

Right 5

0	0
-1	1
-4	2
-9	3

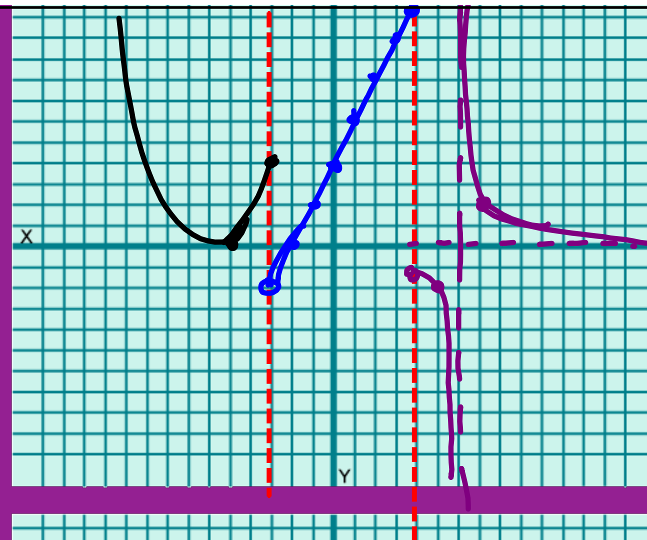
$y=-2\ln(4-x)$

$y=-2\ln(-(x-4))$

Right 4

-1	0
-2.7	$\cancel{1}$ -2
-7.4	$\cancel{2}$ -4

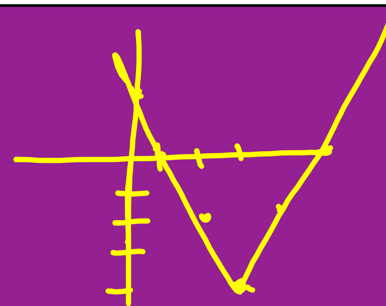
$$f(x) = \begin{cases} (x+5)^2 & x \le -3 \\ 2x+4 & -1 < x < 4 \\ \dfrac{2}{x-6} & x \ge 4 \end{cases}$$



$f(x) = 2|x-3| - 4$

$2(x-3) - 4 = 2x - 6 - 4$
$= 2x - 10$

$-2(x-3) - 4$
$-2x + 6 - 4 = -2x + 2$



$$|x| = \begin{cases} x & x \geq 0 \\ -x & x < 0 \end{cases}$$

$|-8|$

$$f(x) = \begin{cases} 2x - 10 & x \geq 3 \\ -2x + 2 & x < 3 \end{cases}$$

1) Drop abs value & simplify
2) Add − to front, drop abs value & simplify.

Vertex of parabola:

$f(x) = 2x^2 - 8x + 4$

$x = \frac{-b}{2a} = \frac{8}{2(2)} = 2$

$y =$ sub in x-coord $f(x) = 2(2)^2 - 8(2) + 4$

$= 8 - 16 + 4$

$= -4$

$(2, -4)$

Holes – Rational Func. – when terms cancel from a rational func.

$f(x) = \frac{2x^2 - 12x}{x^2 - 8x + 12} = \frac{2x\cancel{(x-6)}}{\cancel{(x-6)}(x-2)}$

set term = 0 & solve.

Hole at $x = 6$