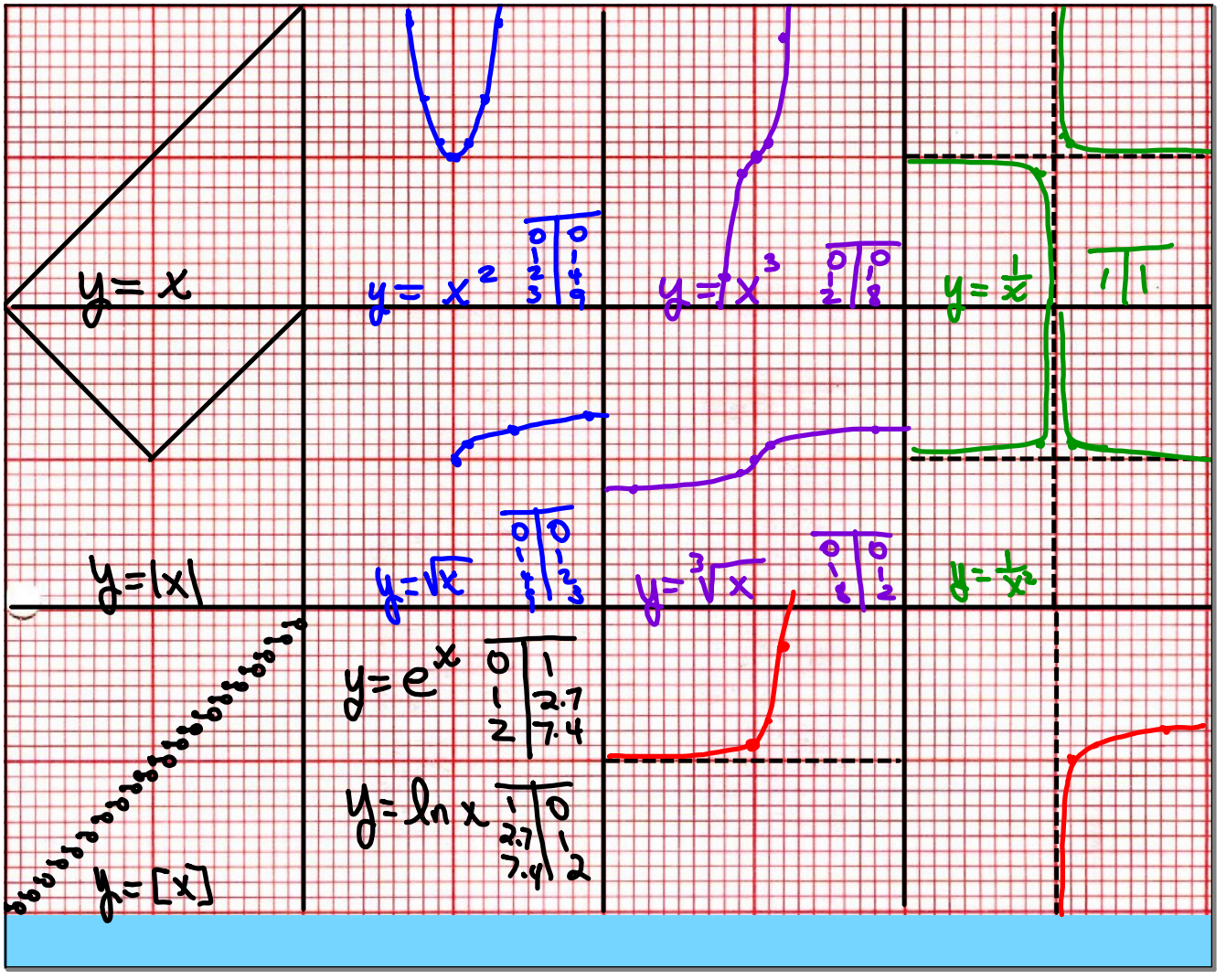
August 28, 2024



$f(x)+c$	up c units
$f(x)-c$	Down c units
$f(x+c)$	Left c units
$f(x-c)$	Right c units
$af(x)$	$a>1$ stretch graph $0<a<1$ Shrink
$-f(x)$	flip over x-axis (change y-coord)
$f(-x)$	flip over y-axis (change x-coord.)

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

$f(x)=\sqrt{x-8}$ Right 8

$f(x)=\frac{1}{2}\sqrt{x}$ ← multiply y-coord

$f(x)=-\sqrt{x}$

$f(x)=\sqrt{-x}$

$f(x)=(-x)^2$

$f(x) = |x|$

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

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

$2(x-4)-2 = 2x-8-2$
$= 2x-10$

$-2(x-4)-2 = -2x+8-2$
$= -2x+6$

$$f(x) = \begin{cases} 2x-10 & x \geq 4 \\ -2x+6 & x < 4 \end{cases}$$