

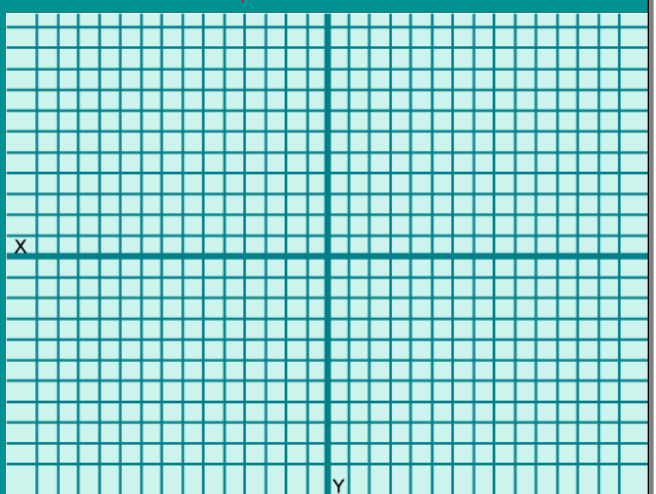
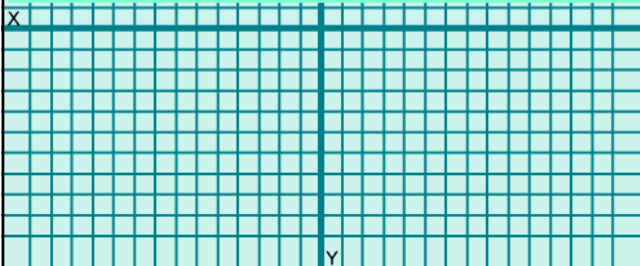
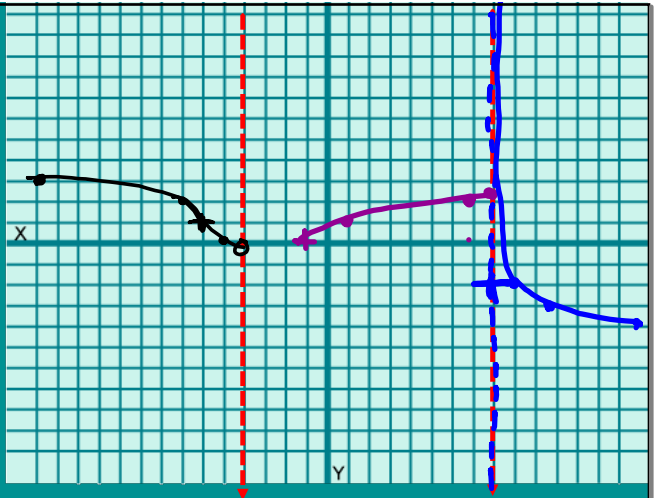
| | | | |
|------------|-----------------|-----------------|----------------------------|
| $f(x) + c$ | up c units | $-f(x)$ | flips over x -axis |
| $f(x) - c$ | down c units | $f(-x)$ | flips over y -axis |
| $f(x+c)$ | left c units | $a f(x)$ | stretch/shrink y -coord. |
| $f(x-c)$ | right c units | $f(ax)$ | stretch/shrink x -coord. |
| | | $y = \sqrt{2x}$ | |

$$f(x) = \frac{2x(x+3)}{(x-5)(x+3)}$$

Hole at $x = -3$

$$f(x) = \begin{cases} \sqrt[3]{6-x} + 1 & x < -4 \\ \sqrt{2(x+1)} & -4 \leq x \leq 8 \\ -\ln(x-8) - 2 & x > 8 \end{cases}$$

| | | | | | |
|----|---|----|---|-----|----|
| 0 | 0 | 0 | 0 | 1 | 0 |
| -1 | 1 | 2 | 1 | 2.7 | -1 |
| -8 | 2 | 8 | 2 | 2.4 | -2 |
| | | 18 | 3 | | |

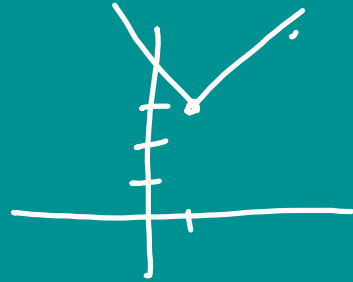


$$f(x) = 2|x-1| + 3$$

$$2(x-1) + 3 = 2x - 2 + 3 \\ = 2x + 1$$

$$-2(x-1) + 3 = -2x + 2 + 3 \\ = -2x + 5$$

$$f(x) = \begin{cases} 2x + 1 & x \geq 1 \\ -2x + 5 & x \leq 1 \end{cases}$$



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