

12-5-17 F* Trig

① $|n-6| \leq 10$

$$\begin{array}{l} n-6 \leq 10 \quad \text{AND} \quad -(n-6) \leq 10 \\ \hline +6 \quad +6 \qquad \qquad \qquad -1 \quad -1 \end{array}$$

$$n \leq 16$$

$$\begin{array}{l} n-6 \geq -10 \\ \hline +6 \quad +6 \end{array}$$

$$n \geq -4$$

$$-4 \leq n \leq 16$$

② $|n+7| < -8$

How often $+ < -8$?

NO SOLUTIONS

③ Find the slant of

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

$$\begin{array}{r} x+3 \overline{) x^2 + 6x + 2} \\ \underline{-(x^2 + 3x)} \\ 3x + 2 \\ \underline{-(3x + 9)} \\ -7 \end{array}$$

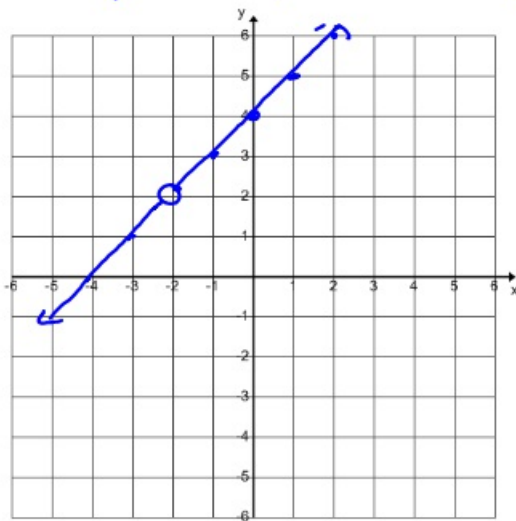
$y = x + 3$

④ Find the hole and graph

$$y = \frac{x^2 + 6x + 8}{x + 2}$$

$$\frac{(x+4)(\cancel{x+2})}{\cancel{x+2}}$$

$$y = x + 4 \quad [x \neq -2]$$



⑤ $y = \frac{8x^5 - 6x + 1}{x^2 + 7x + 10}$

H: Bobo Both Eats DC
None

V: $x^2 + 7x + 10 = 0$

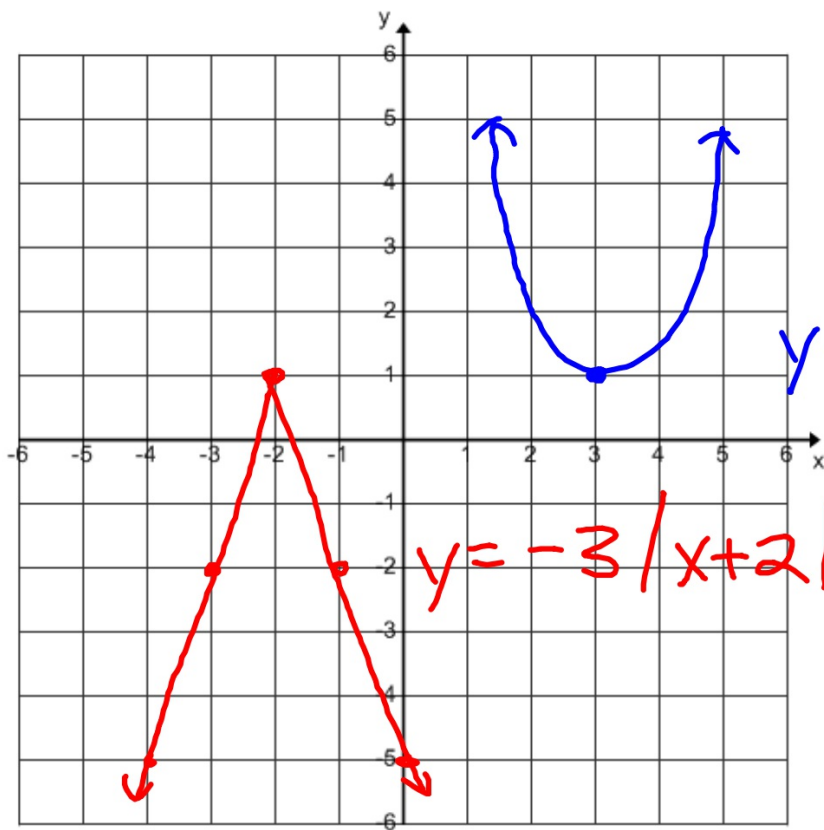
$$(x+2)(x+5) = 0$$

$$\begin{array}{r} x+2=0 \\ -2-2 \\ \hline \end{array}$$

$$x = -2$$

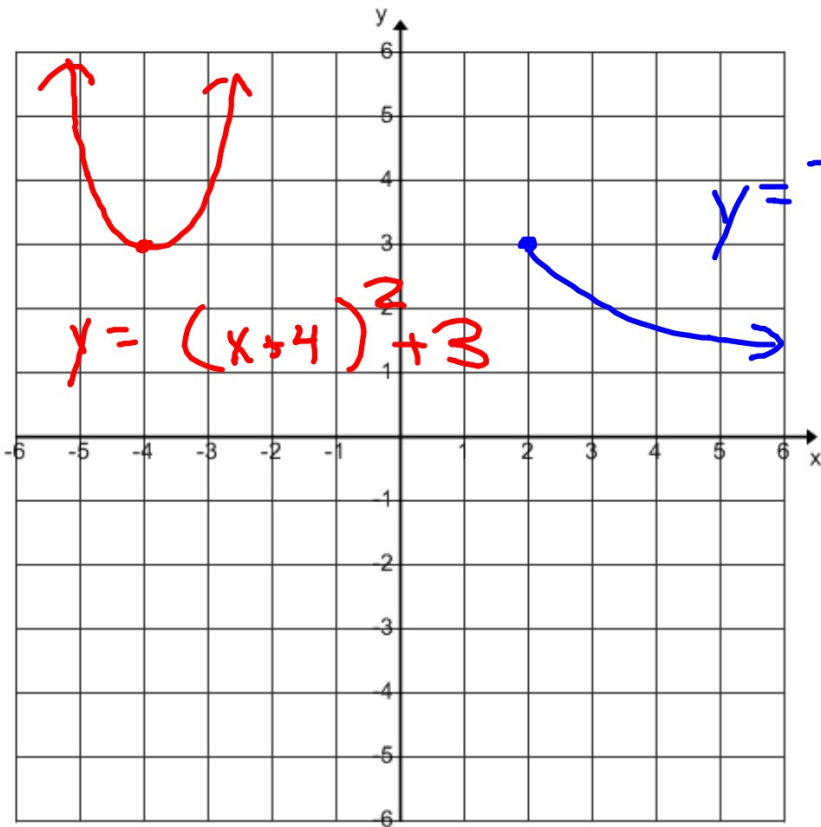
$$\begin{array}{r} x+5=0 \\ -5-5 \\ \hline \end{array}$$

$$x = -5$$



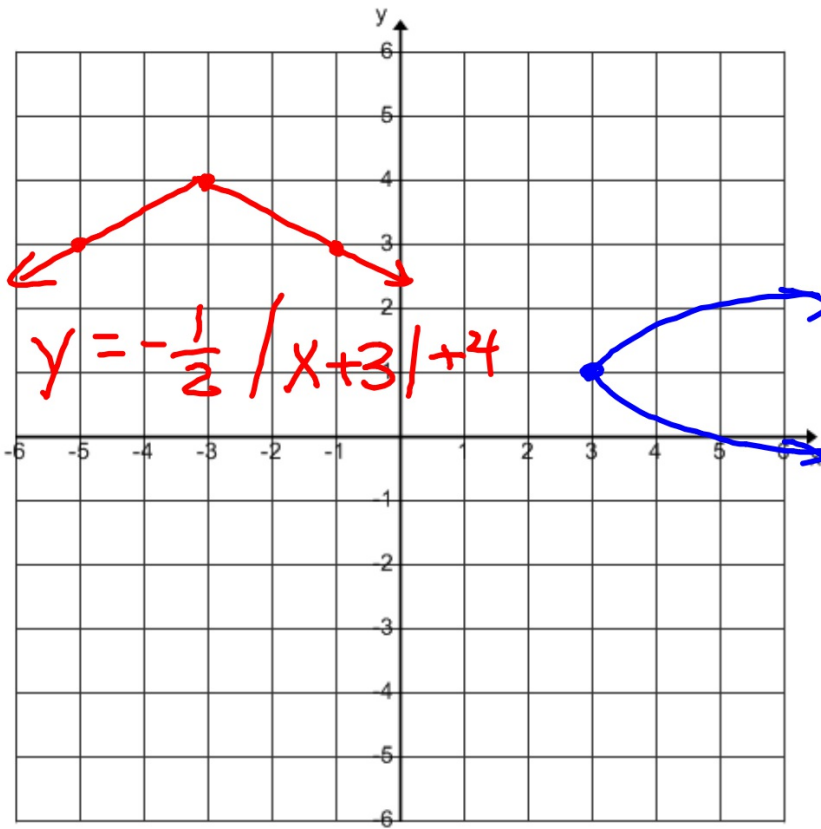
$$y = (x - 3)^2 + 1$$

$$y = -3|x + 2| + 1$$



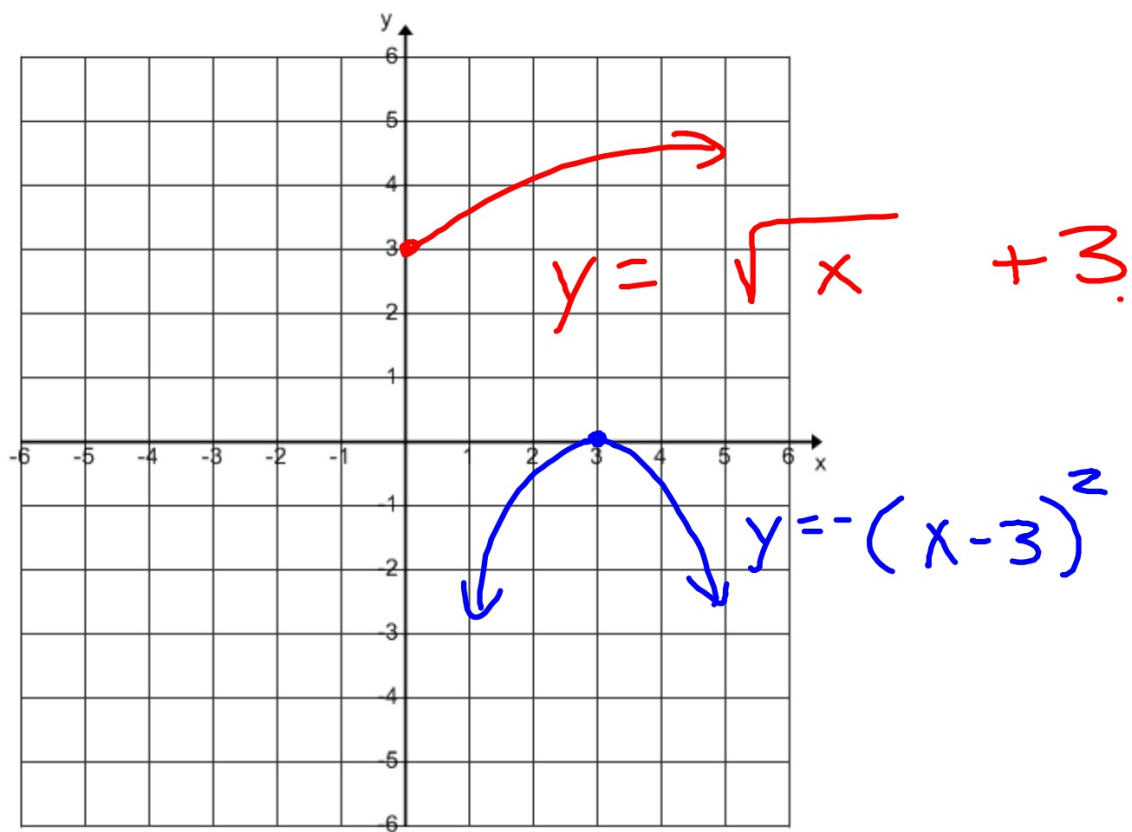
$$y = (x + 4)^2 + 3$$

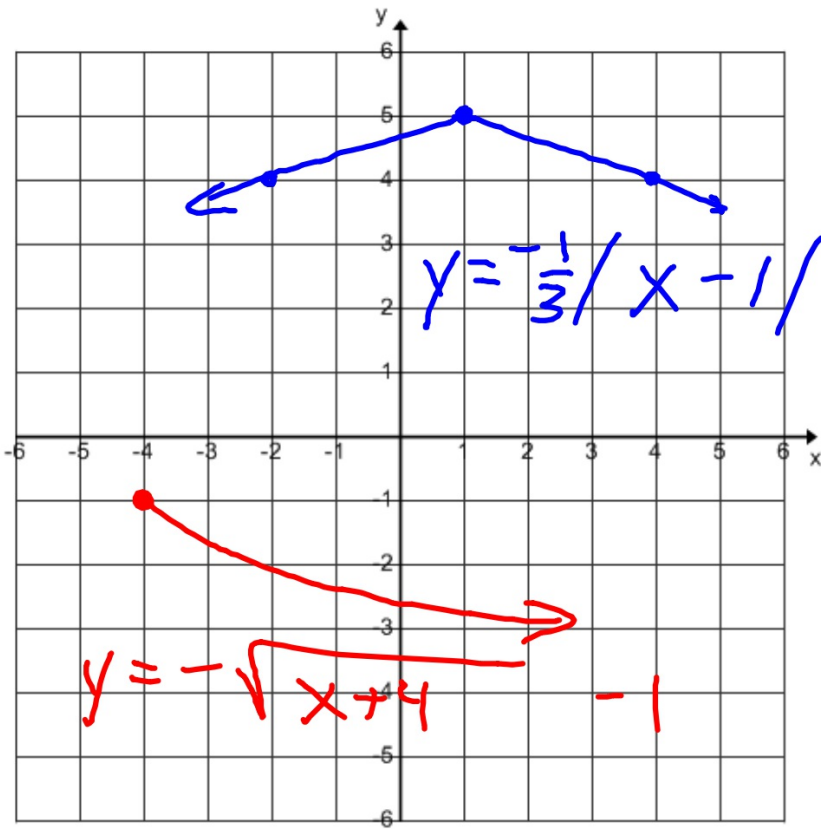
$$y = -\sqrt{x - 2} + 3$$



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

$$y = \pm \sqrt{x-3} + 1$$





$$y = -\frac{1}{3} | x - 1 | + 5$$

$$y = -\sqrt{x + 4} - 1$$

$$y = \frac{5x+1}{x+8}$$

H: Bobo Botn Euts DC

$$y = \frac{5}{1}$$

$y = 5$

V:

$$\begin{array}{r} x+8=0 \\ -8-8 \\ \hline \end{array}$$

$$x = -8$$

12-5-17 3rd Trig

① $|x+3| \leq 10$

$$\begin{array}{r} x+3 \leq 10 \quad \text{AND} \quad \cancel{x(x+3)} \leq 10 \\ \underline{-3 \quad -3} \qquad \qquad \qquad \underline{-1 \quad -1} \\ x \leq 7 \qquad \qquad \qquad x+3 \geq -10 \\ \qquad \qquad \qquad \qquad \qquad \underline{-3 \quad -3} \\ \qquad \qquad \qquad \qquad \qquad x \geq -13 \end{array}$$

$x \leq 7$ AND $x \geq -13$

$-13 \leq x \leq 7$

② $|x-6| > -2$

↓
Always positive > -2
Always happens so
 \mathbb{R}

$+ < -10$
No solution

③ Give me the slant asymptote of

$$y = \frac{x^2 + 6x + 8}{x+3}$$

$$\begin{array}{r} x+3 \overline{) x^2 + 6x + 8} \\ \underline{-(x^2 + 3x)} \\ 3x + 8 \\ \underline{-(3x + 9)} \\ -1 \end{array}$$

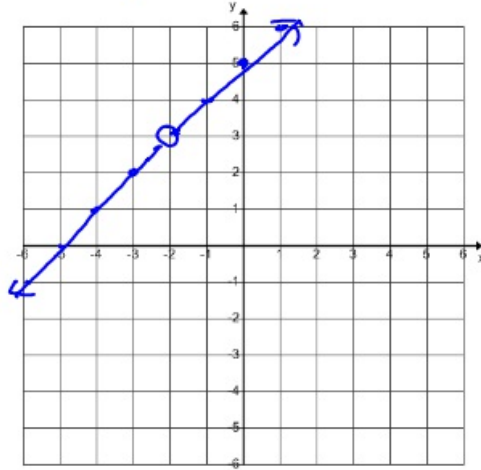
Slant is at

$y = x+3$

④ Graph $y = \frac{x^2 + 7x + 10}{x + 2}$

$$\frac{\cancel{(x+2)}(x+5)}{\cancel{x+2}}$$

$$y = x + 5 \quad [x \neq -2]$$



⑤ Give H and V of

$$y = \frac{3x - 1}{x + 8}$$

H: Bobo Botn Euts DC

$$y = \frac{3}{1}$$
$$\underline{y = 3}$$

V: $x + 8 = 0$

$$\begin{array}{r} x + 8 = 0 \\ -8 \quad -8 \\ \hline x = -8 \end{array}$$

$$\textcircled{6} \quad y = \frac{x^4 + 6x - 1}{x^2 + 5x + 6}$$

H: Bobo Botn EutsDC
None

$$V: \quad x^2 + 5x + 6 = 0$$

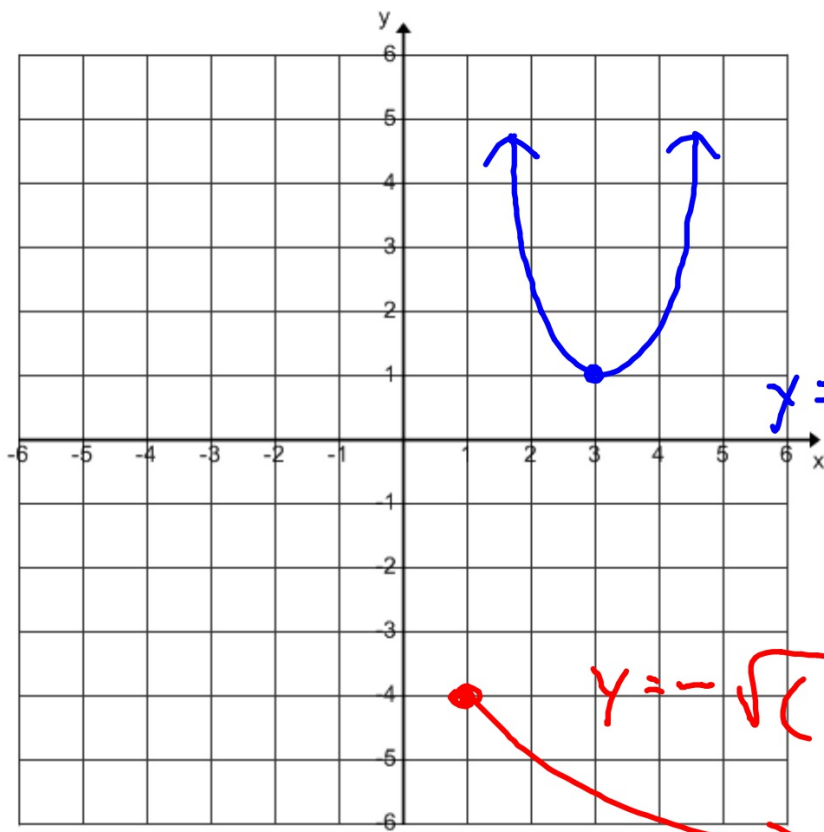
$$(x+3)(x+2) = 0$$

$$\begin{array}{r} x+3=0 \\ -3 \quad -3 \\ \hline \end{array}$$

$$x = -3$$

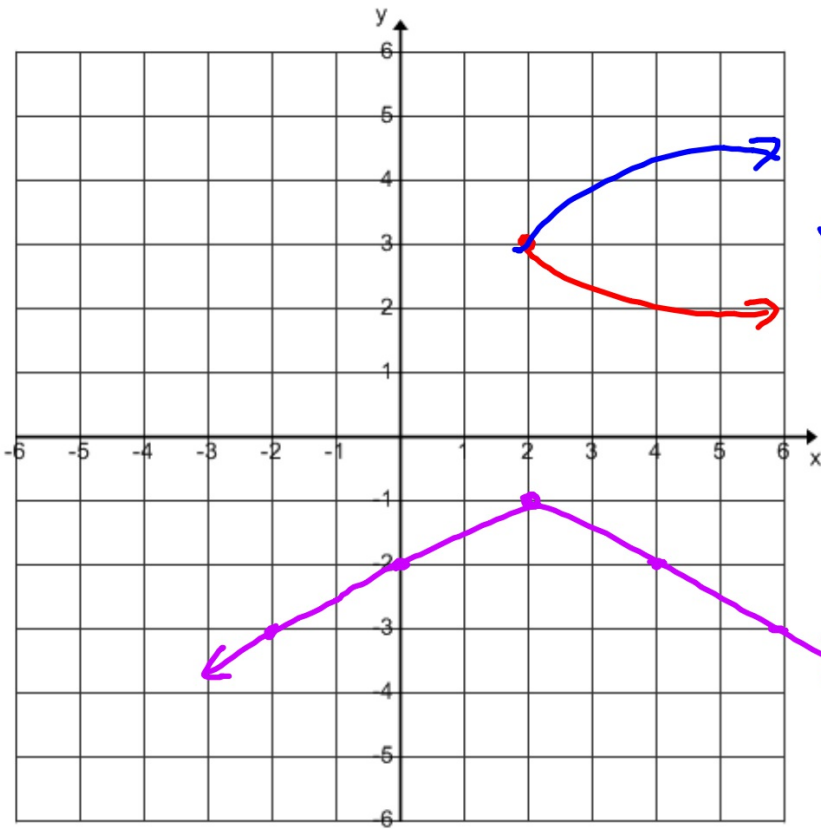
$$\begin{array}{r} x+2=0 \\ -2 \quad -2 \\ \hline \end{array}$$

$$x = -2$$



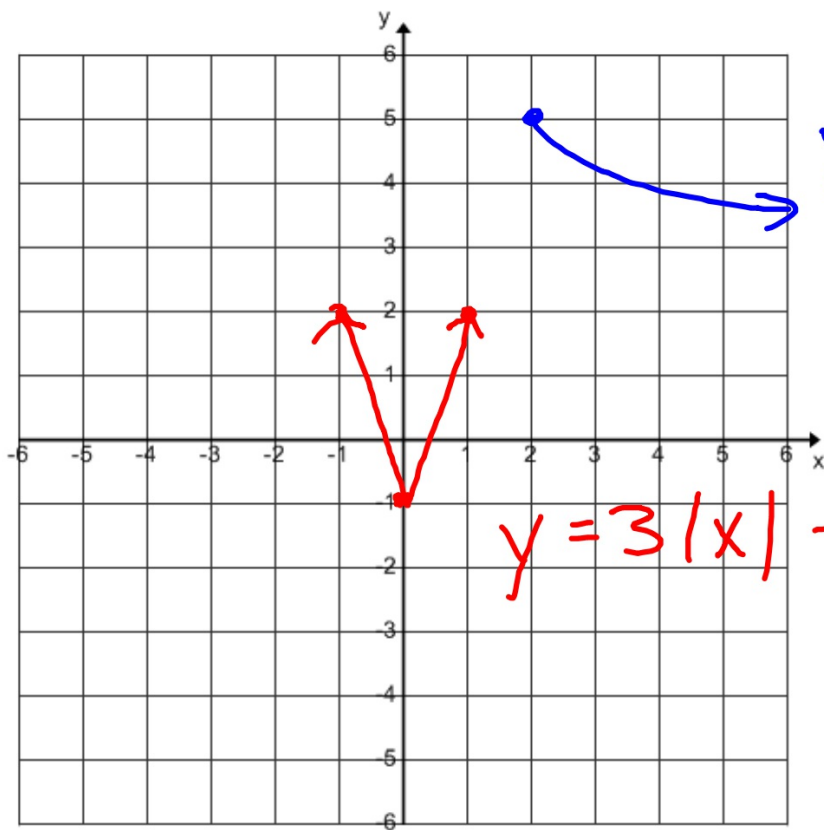
$$y = (x-3)^2 + 1$$

$$y = -\sqrt{(x-1)} - 4$$



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

$$y = -\frac{1}{2}|x-2| - 1$$



$$y = -\sqrt{x-2} + 5$$

$$y = 3|x| - 1$$

12-5-17 4th Try

① $|x-4| \leq 10$

$$\begin{array}{l} x-4 \leq 10 \\ +4 \quad +4 \\ \hline x \leq 14 \end{array} \quad \text{AND} \quad \begin{array}{l} \cancel{(x-4)} \leq \frac{10}{-1} \\ \hline x-4 \geq -10 \\ +4 \quad +4 \\ \hline x \geq -6 \end{array}$$

$x \leq 14$ AND $x \geq -6$ $x \geq -6$

$-6 \leq x \leq 14$

② $|x+6| \geq -5$

↓

Positive ≥ -5
#

Always happens, so
answer is \mathbb{R}

③ Find the slant for

$$y = \frac{x^2 + 8x + 1}{x + 5}$$

$$\begin{array}{r} x+5 \overline{) x^2+8x+1} \\ \underline{-(x^2+8x)} \\ 3x+1 \end{array}$$

$y = x + 3$

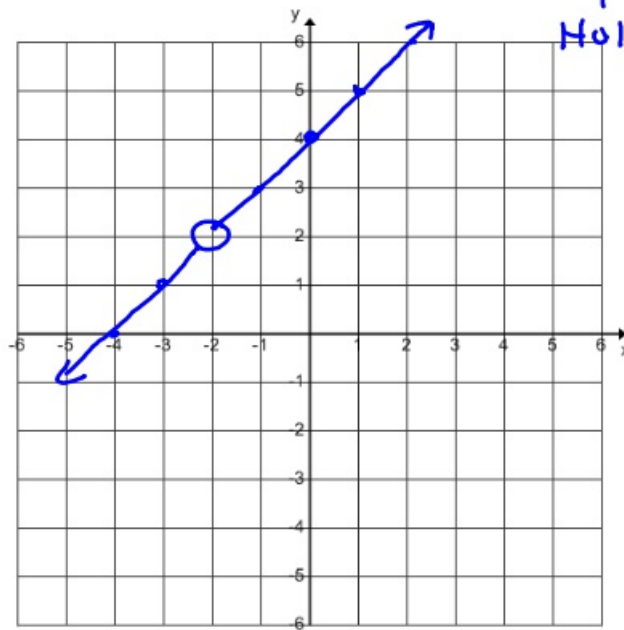
$$\begin{array}{r} 3x+1 \\ \underline{3x+15} \\ -14 \end{array}$$

④ Graph $y = \frac{x^2 + 6x + 8}{x + 2}$

$$\frac{\cancel{(x+2)}(x+4)}{\cancel{x+2}}$$

$$y = x + 4 \quad [x \neq -2]$$

↑
Hole at $x = -2$



⑤ $y = \frac{6x - 1}{3x + 2}$

H: Bobo Botn Euts DC

$$y = \frac{6}{3} \quad \text{y} = 2$$

V: $3x + 2 = 0$

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

Slant: None

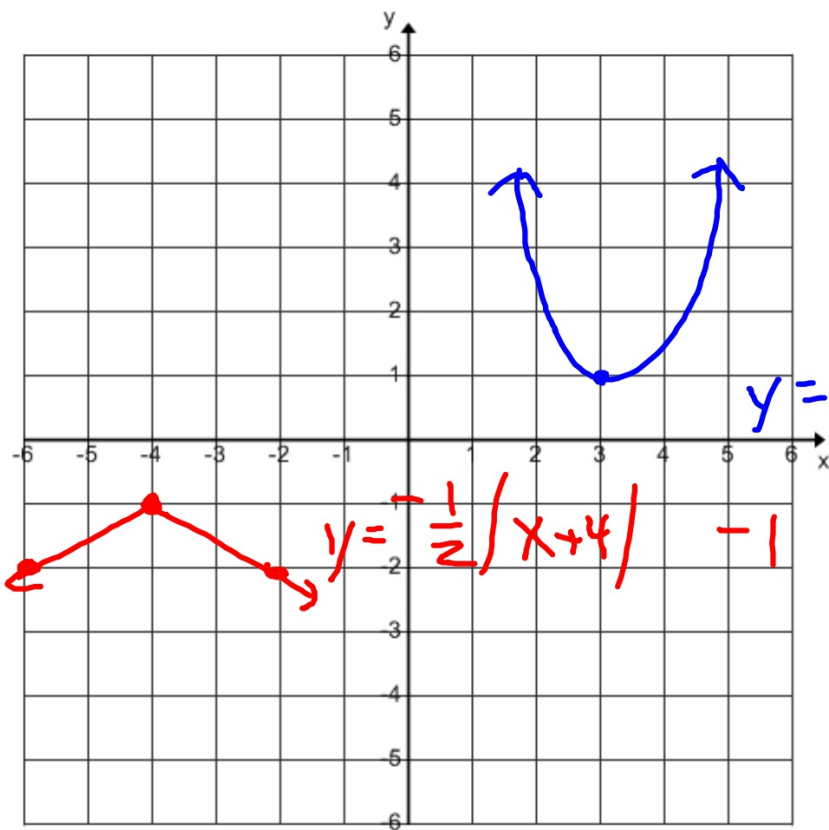
$$(6) \quad y = \frac{x^2 - 15x + 1}{x^2 + 7x + 10}$$

H: Bobo Bobo Eats DC
None

$$V: \quad x^2 + 7x + 10 = 0$$
$$(x+2)(x+5) = 0$$

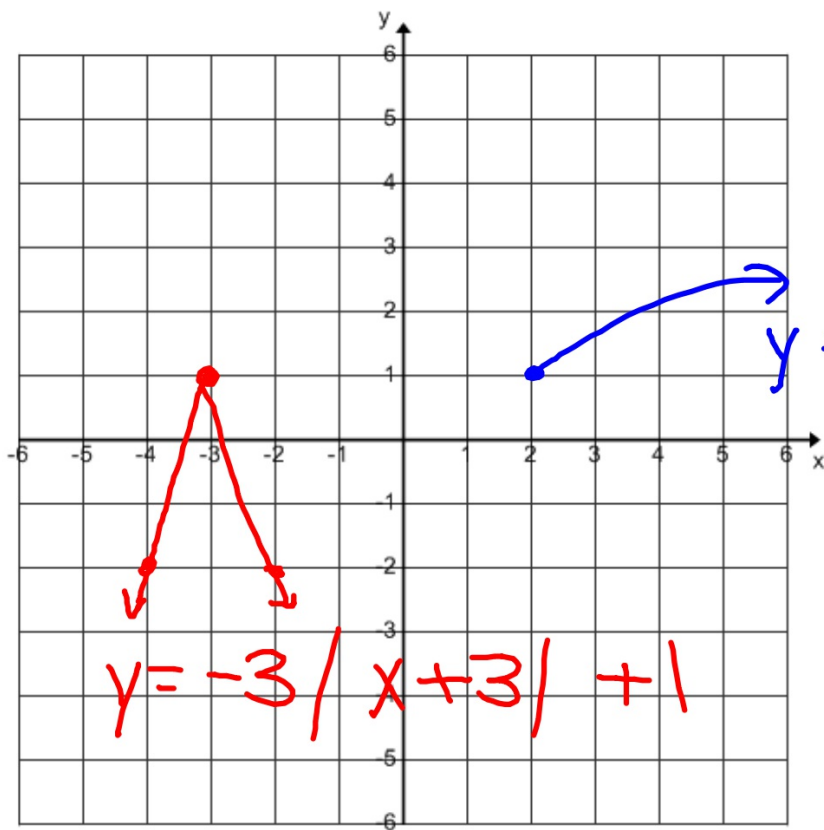
$$S: \quad \begin{array}{l} x+2=0 \quad x+5=0 \\ x=-2 \quad x=-5 \end{array}$$

↙
No slant



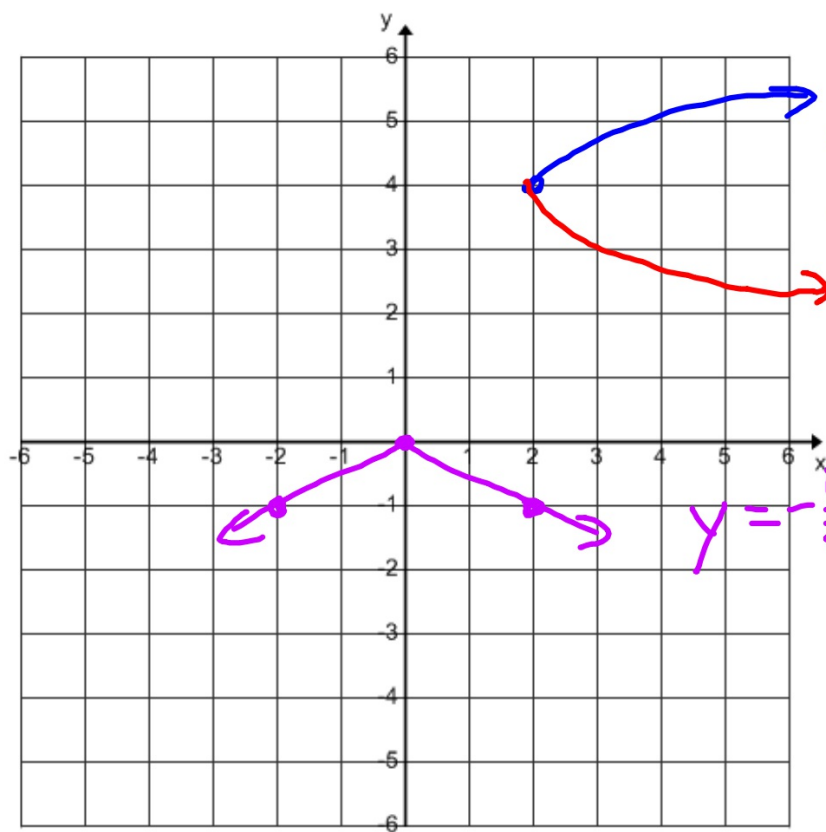
$$y = (x - 3)^2 + 1$$

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



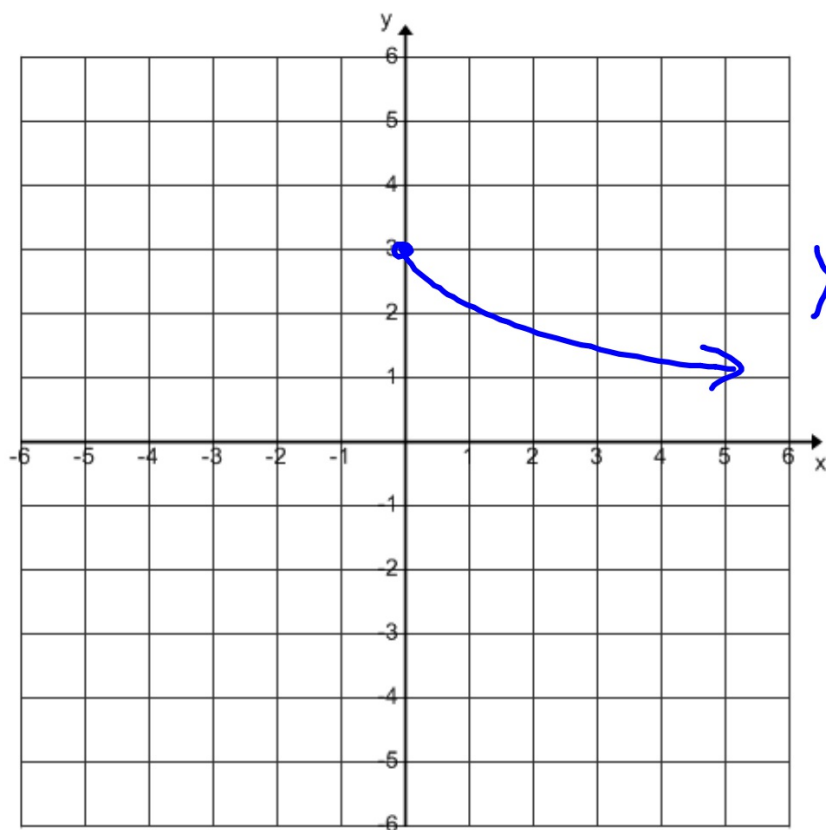
$$y = -3|x+3| + 1$$

$$y = \sqrt{x-2} + 1$$



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

$$y = -\frac{1}{2}|x|$$



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