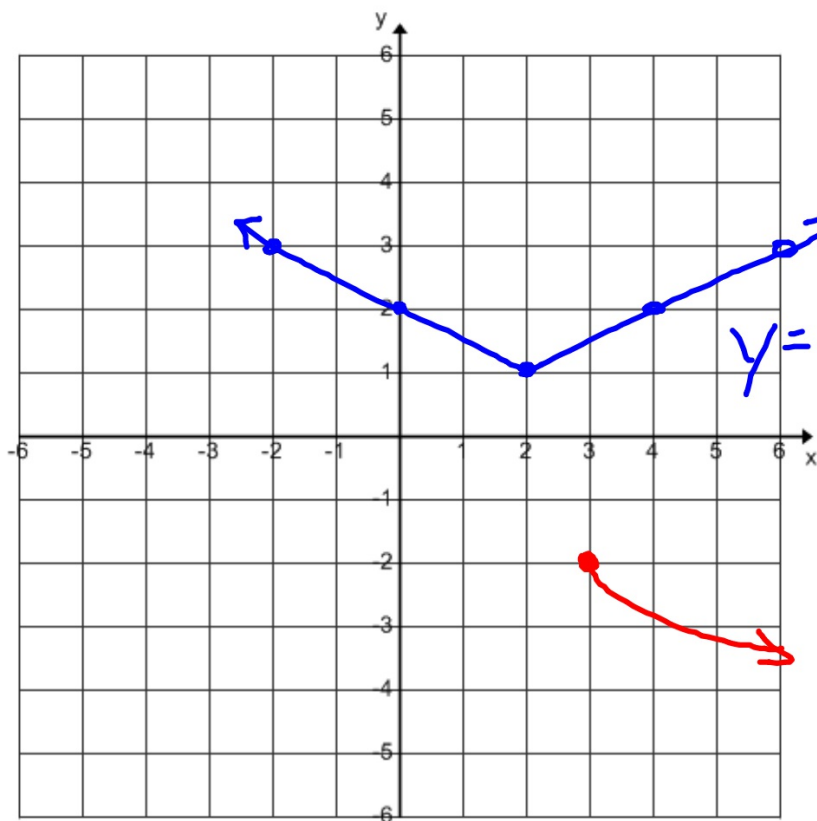
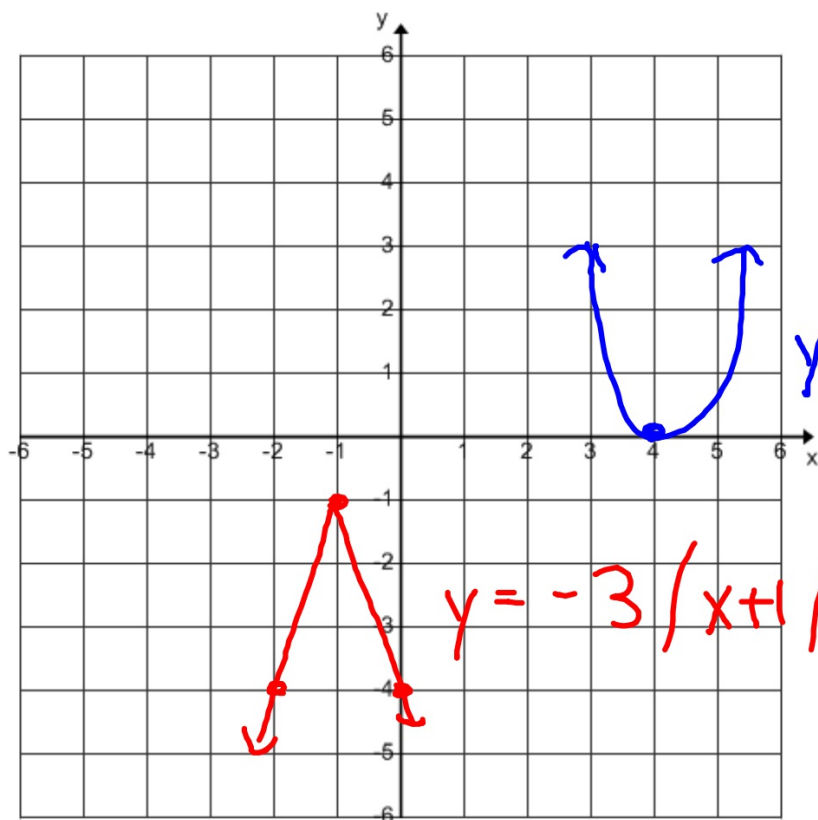


12-4-17 1^{er} Trig



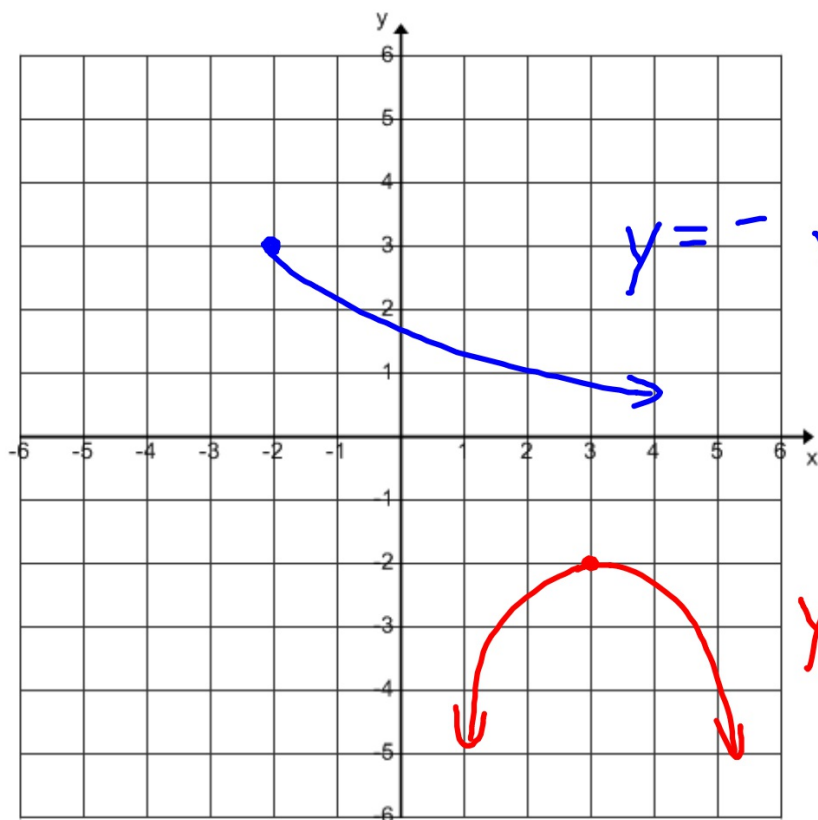
$$y = \frac{1}{2} |x - 2| + 1$$

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



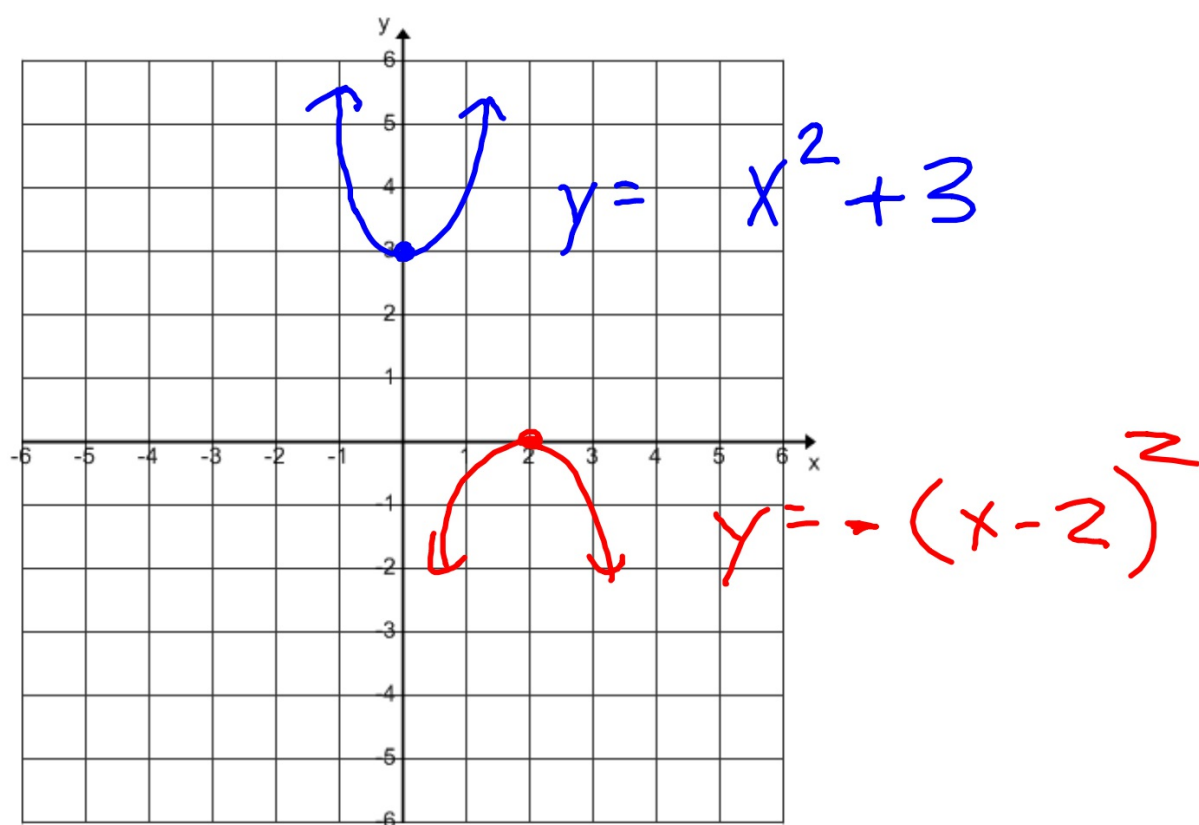
$$y = (x - 4)^2$$

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



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

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



Asymptotes \rightarrow

Horizontal / Vertical

$$\textcircled{1} \quad y = \frac{x^3 + 8x - 1}{2x - 4}$$

H: Bobo **Botn** Eats DC

None \Rightarrow No asymptote

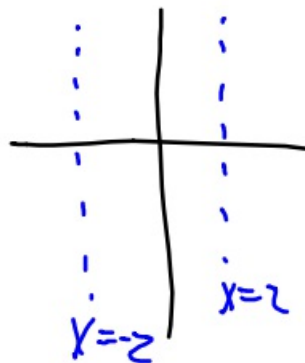
$$\begin{array}{r} V: \quad 2x - 4 = 0 \\ \quad \quad \quad +4 \quad +4 \\ \hline \quad \quad \quad 2x = 4 \\ \quad \quad \quad x = 2 \end{array}$$

$$\textcircled{2} \quad y = \frac{6x^2 + 8x - 1}{x^2 - 4}$$

H: Bobo Botn **Eats DC**

$$y = \frac{6}{1} \quad y = 6$$

$$\begin{array}{l} V: \quad x^2 - 4 = 0 \\ \quad \quad \quad +4 \quad +4 \\ \hline \quad \quad \quad x^2 = 4 \\ (x-2)(x+2) = 0 \quad \sqrt{x^2} = \sqrt{4} \\ x = 2 \quad x = -2 \quad x = \pm 2 \end{array}$$



③ Slant $y = \frac{x^2 + 3x + 1}{x + 2}$

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

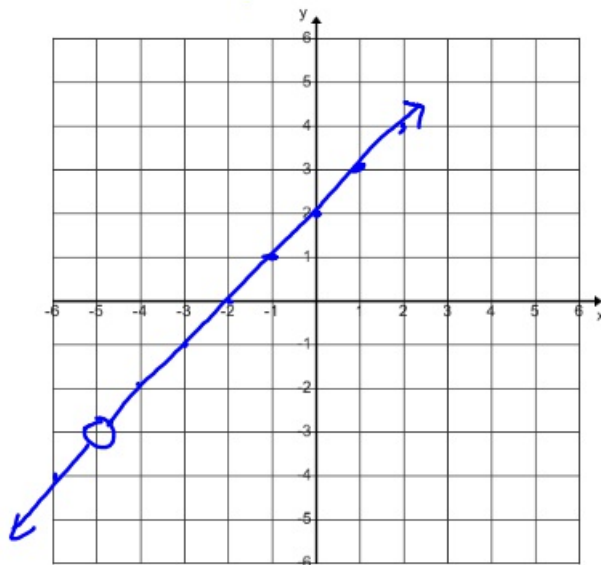
Slant at $y = x + 1$

④ Find hole for

$$y = \frac{x^2 + 7x + 10}{x + 5}$$

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

$y = x + 2$ Hole at $x = -5$



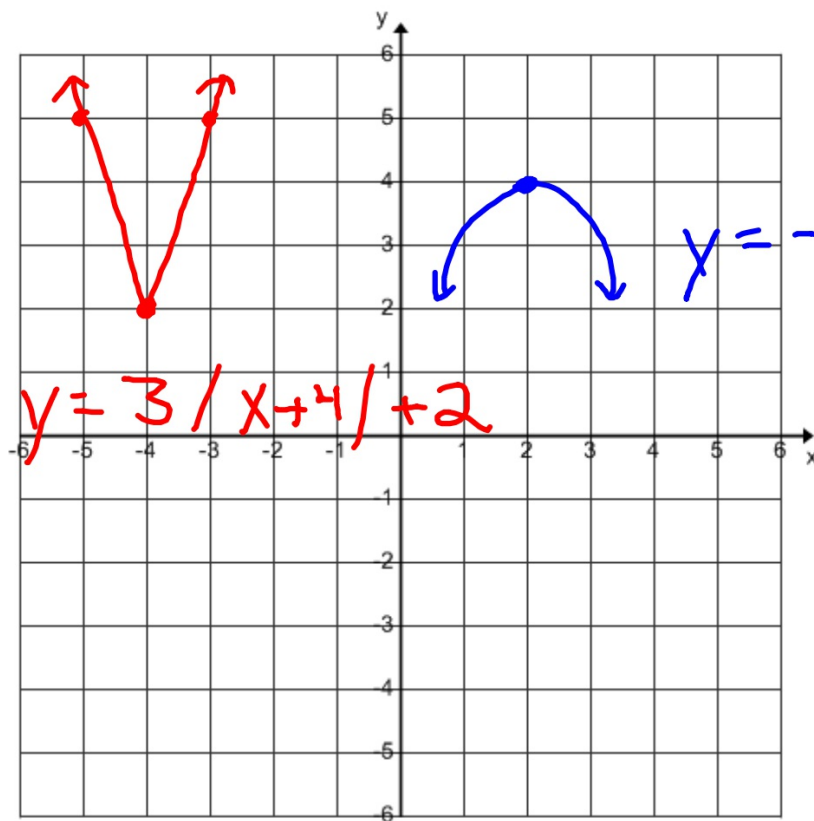
⑤ Solve $|x+3| > 8$

$$\begin{array}{r} x+3 > 8 \\ -3 \quad -3 \\ \hline x > 5 \end{array} \quad \text{OR} \quad \begin{array}{r} -(x+3) > 8 \\ -1 \quad -1 \\ \hline x+3 < -8 \\ -3 \quad -3 \\ \hline x < -11 \end{array}$$

$$x > 5 \quad \text{OR} \quad x < -11$$

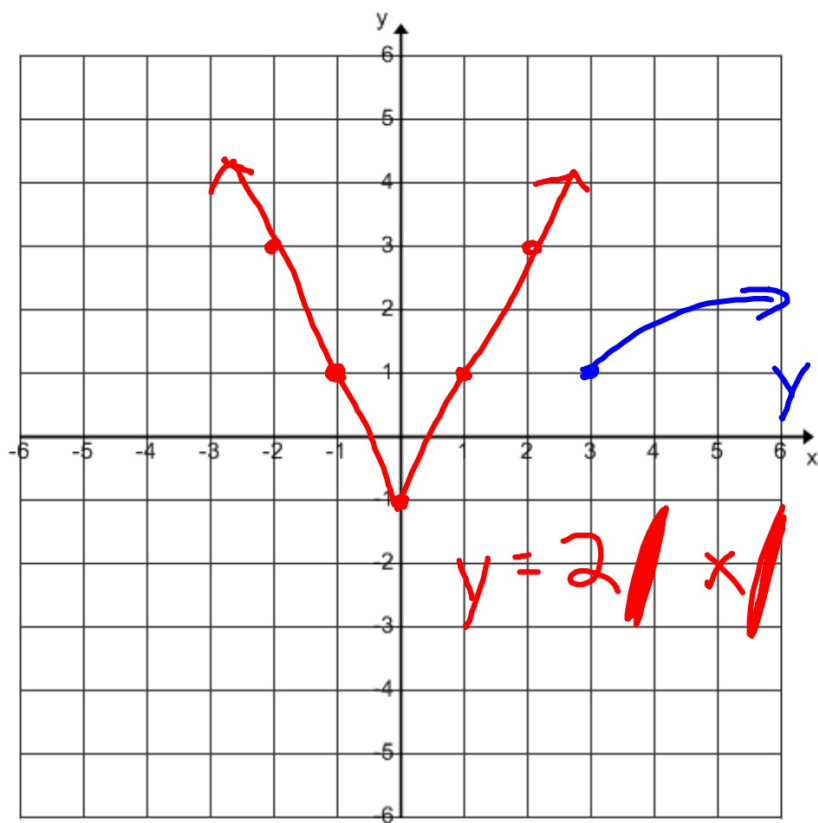
12-4-17

3rd Trig

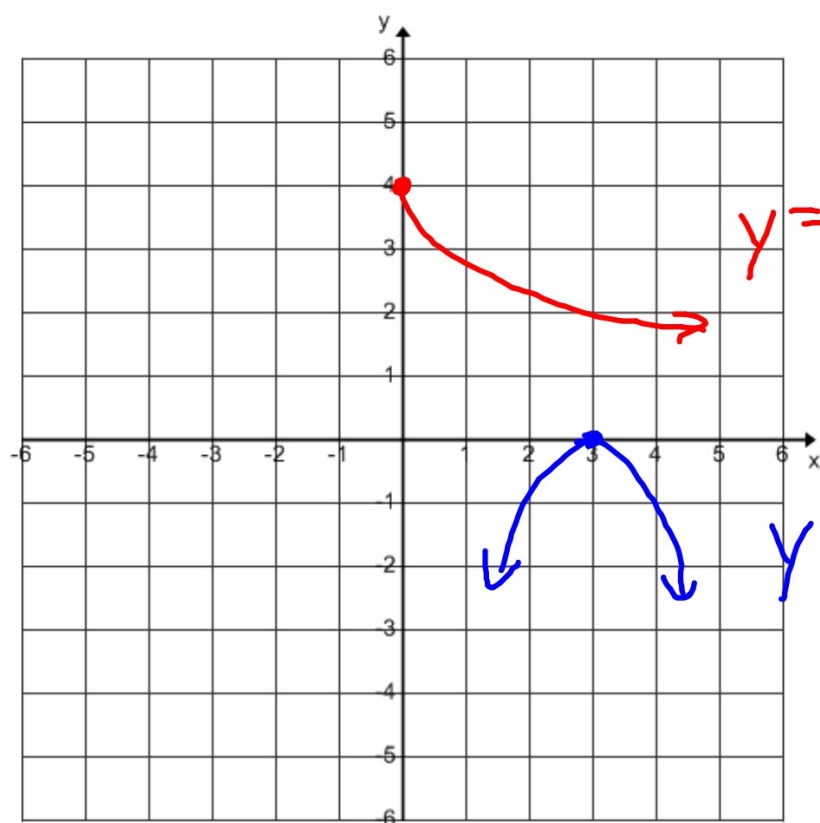


$$y = 3/|x+4| + 2$$

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



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



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

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

Horizantal/Vertical Asymptotes

$$\textcircled{1} \quad y = \frac{6x^2 + 1}{x^2 - 9}$$

H: Bobo Buta Eats DC

$$y = \frac{6}{1}$$
$$y = 6$$

$$V: x^2 - 9 = 0$$

$$(x-3)(x+3) = 0 \quad \sqrt{x^2} = \sqrt{9}$$

$$x = 3 \quad x = -3$$

$$x = \pm 3$$

$$\textcircled{2} \quad y = \frac{3x^4 - 6x + 1}{x + 8}$$

H: Bobo Buta Eats DC
None

$$V: x + 8 = 0$$

$$x = -8$$

③ Find the slant asymptote of

$$y = \frac{x^2 + 3x + 1}{x + 5}$$

$$\begin{array}{r} x - 2 \\ x + 5 \overline{) x^2 + 3x + 1} \\ \underline{-(x^2 + 5x)} \\ -2x + 1 \\ \underline{-2x - 10} \\ 11 \end{array}$$

$$y = x - 2$$

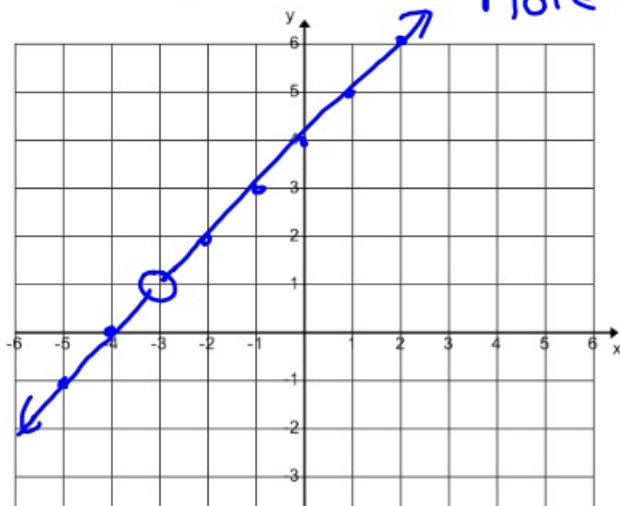
④ Find the hole in

$$y = \frac{x^2 + 7x + 12}{x + 3}$$

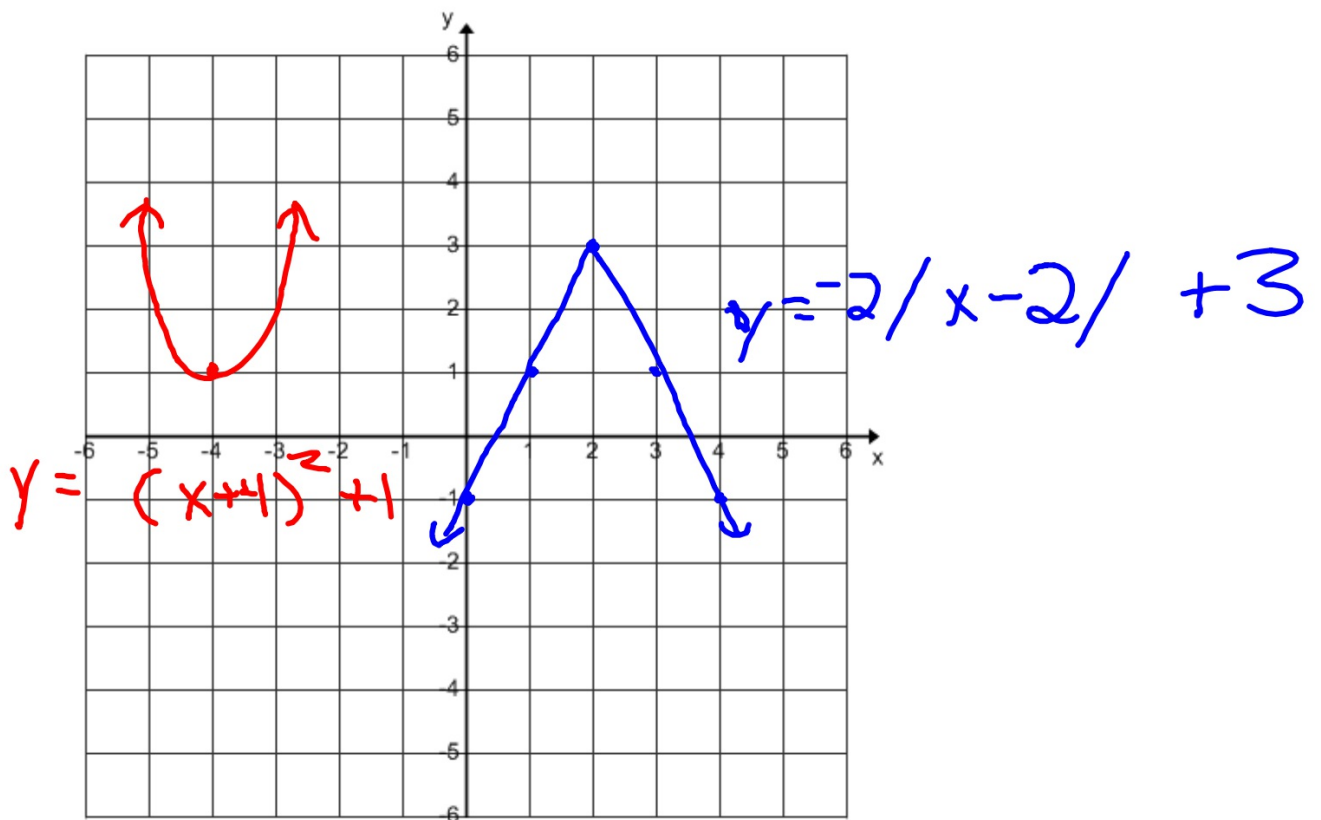
$$y = \frac{(x + 4)\cancel{(x + 3)}}{\cancel{x + 3}}$$

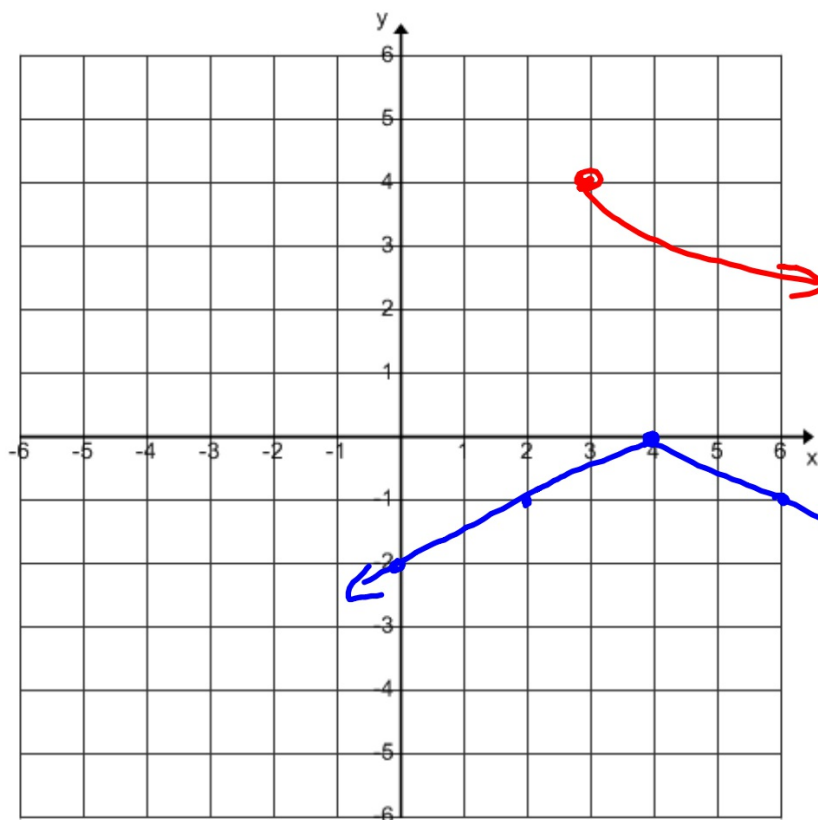
$$y = x + 4 \quad [x \neq -3]$$

Hole at $x = -3$



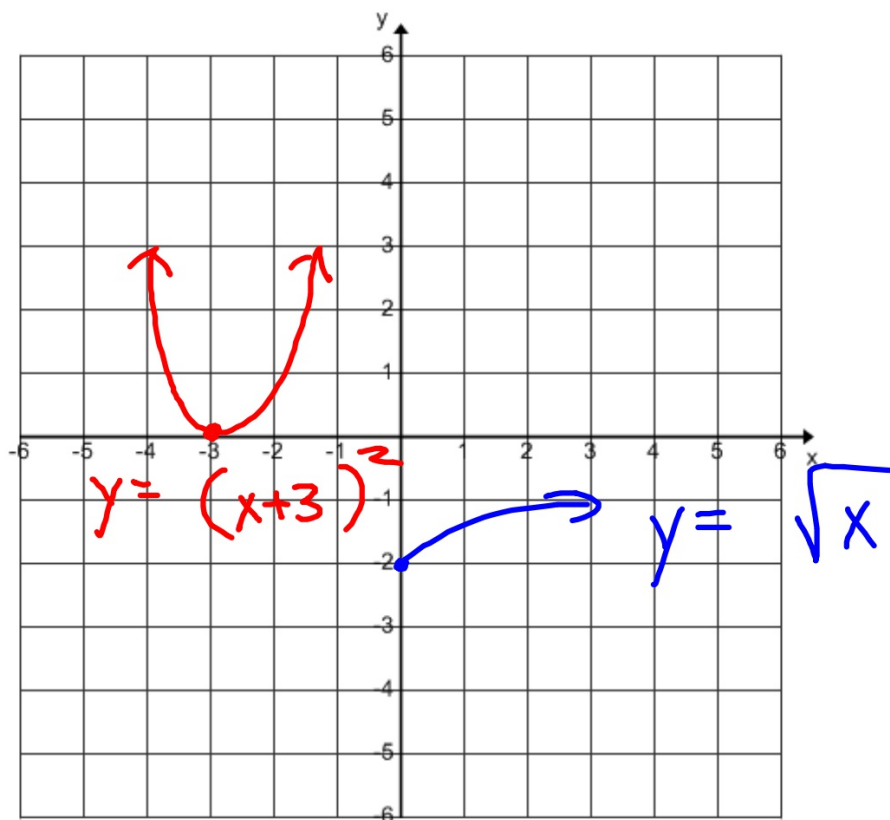
12-4-17 4^{er} Trig





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

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



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

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

- 2

$$\textcircled{1} \quad y = \frac{6x^3 + x - 1}{x + 7}$$

H: Bobo Botu Euts DC
None

$$V: \quad \begin{array}{r} x + 7 = 0 \\ -7 \quad -7 \\ \hline \end{array}$$

$x = -7$

$$\textcircled{2} \quad y = \frac{4x^2 + 3x + 10}{x^2 - 25}$$

H: Bobo Botu Euts DC

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

$$V: \quad x^2 - 25 = 0$$

$$(x + 5)(x - 5) = 0$$
$$x = 5 \quad x = -5$$

$$x^2 - 25 = 0$$
$$\sqrt{x^2} = \sqrt{25}$$

$x = \pm 5$

$$\textcircled{3} \quad y = \frac{x^2 + 3x + 10}{x + 5}$$

Slant

$$y = x - 2$$

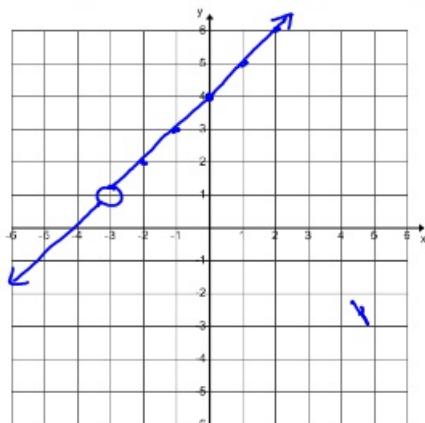
$$\begin{array}{r} \textcircled{x-2} \\ x+5 \overline{) x^2 + 3x + 10} \\ \underline{-(x^2 + 5x)} \\ -2x + 10 \\ \underline{-(-2x - 10)} \\ 20 \end{array}$$

$\textcircled{4}$ Hole

$$y = \frac{x^2 + 7x + 12}{x + 3}$$

$$y = \frac{\cancel{(x+3)}(x+4)}{\cancel{x+3}}$$

$$y = x + 4 \quad [x \neq -3]$$



$$\textcircled{5} \quad |x - 2| > 7$$

$$\begin{array}{l} x - 2 > 7 \\ +2 \quad +2 \\ \hline x > 9 \end{array} \quad \text{OR} \quad \begin{array}{l} -(x - 2) > 7 \\ -1 \quad -1 \\ \hline x - 2 < -7 \\ +2 \quad +2 \\ \hline x < -5 \end{array}$$

$$\textcircled{x > 9 \text{ OR } x < -5}$$