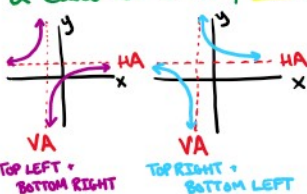
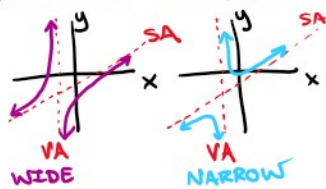


2 Cases for 1 HA & 1 VA

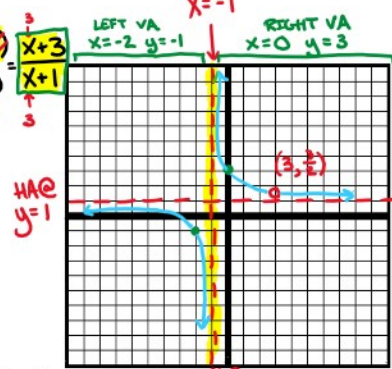


2 Cases for 1 SA & 1 VA



ex $f(x) = \frac{1x^2 - 9}{1x^2 - 2x - 3} = \frac{(x+3)(x-3)}{(x+3)(x-1)}$

- ① HA @ $y = 1$
- ② SA @ $y = \text{none}$
- ③ Disc @ $(3, \frac{3}{2})$
- ④ VA @ $x = -1$

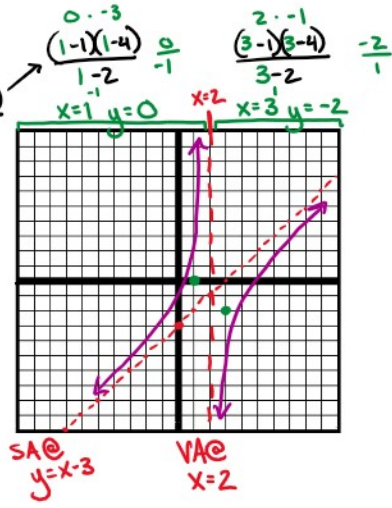


Steps to sketch graph:

- ① Plot all asymptotes and discontinuities
 - ② Sketch the appropriate curves
 - Plot (x,y) points: pick x-values to the left/right of the VA and plug them in to f(x) to find their y-values and then plot these points to determine the locations of the curves
- *Trick - your curves must go through any discontinuity

ex $f(x) = \frac{x^2 - 5x + 4}{x - 2} = \frac{(x-1)(x-4)}{x-2}$

- ① HA @ $y = \text{none}$
- ② SA @ $y = x - 3$
- ③ Disc @ $(\text{none}, -)$
- ④ VA @ $x = 2$



$$\begin{array}{r} mx+b \\ X-2 \overline{) X^2 - 5x + 4} \\ \underline{-X + 2x} \\ -3x + 4 \end{array}$$

$$\begin{array}{r} 2 \\ 1 -5 4 \\ 2 -6 \\ \hline 1 -3 -2 \\ X C R \\ \hline X-3 \end{array}$$