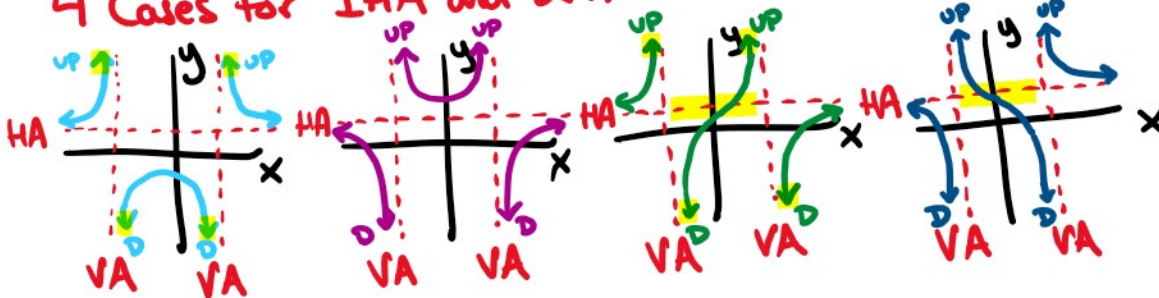
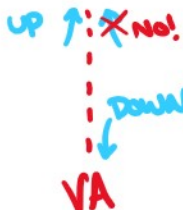


4 Cases for 1HA and 2VA



* "RULE" of Alternating Arrows - arrows on opposite sides of a VA will alternate in direction

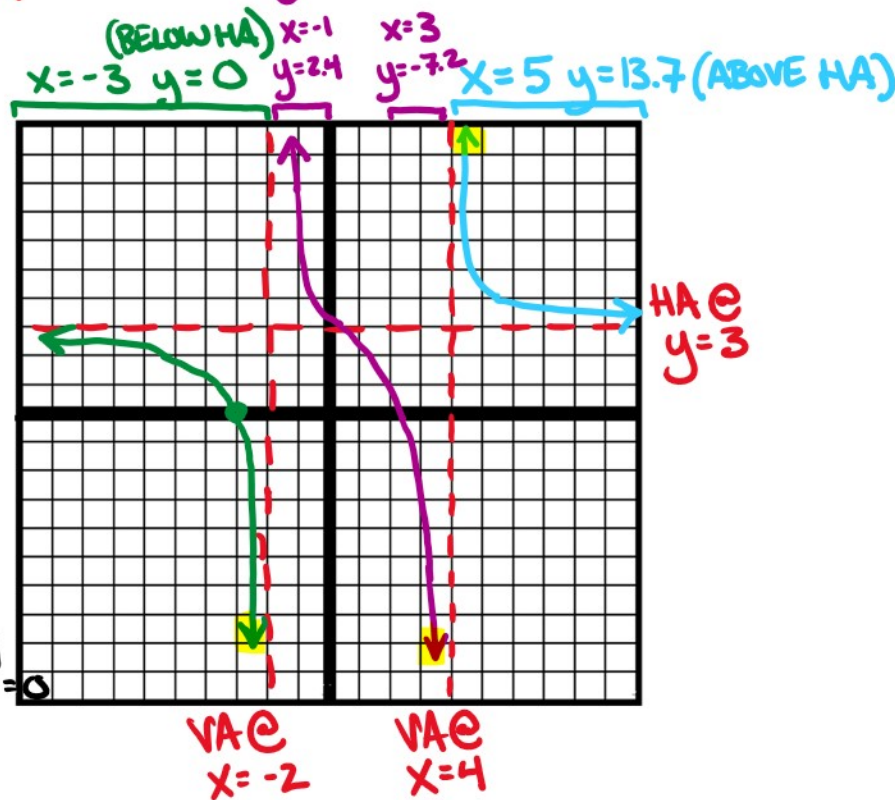


INEFFICIENT
 $x = -1.5$
 $y = 4.1$

ex $f(x) = \frac{3x^2 + 6x - 9}{x^2 - 2x - 8}$

Linear Factorization $f(x) = \frac{3(x+3)(x-1)}{(x-4)(x+2)}$

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



$$f(-3) = \frac{3(3+3)(3-1)}{(3-4)(3+2)} = \frac{3 \cdot 0 \cdot 4}{-7 \cdot -1} = 0$$

$$f(5) = \frac{3(5+3)(5-1)}{(5-4)(5+2)} = \frac{3 \cdot 8 \cdot 4}{1 \cdot 7} = \frac{96}{7} = 13.7$$