

7.

$$g(x) = \frac{(x-5)}{(x(x+5))}$$

FINDING VERTICAL ASYMPTOTES

- ① FACTOR TOP
FACTOR BOTTOM
- ② CANCEL IF POSSIBLE
- ③ SET DENOM EQUAL TO
ZERO AND SOLVE

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

$$x=0 \quad x+5=0$$

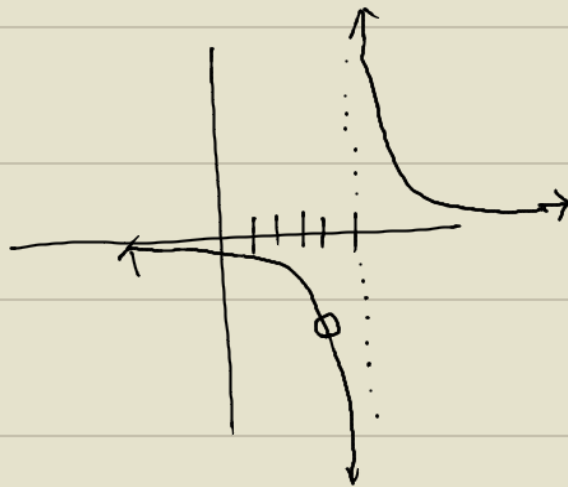
$$\text{VA } x=0 \quad x=-5$$

$$8. \quad g(x) = \frac{\cancel{x-4}}{(\cancel{x-4})(x-5)} \quad x \neq 4 \quad x \neq 5$$

$$= \frac{1}{(x-5)}$$

$$x-5=0$$

$$x=5 \text{ VA}$$



$$9. \quad f(x) = \frac{8x}{5x^2 - 3x + 1}$$

$$\text{HA: } y=0$$

$$10. \quad g(x) = \frac{8x^2}{4x^2 + 3}$$

$$\text{HA: } y = \frac{8}{4}$$

$$y=2$$

$$11. \quad h(x) = \frac{10x^3}{4x^2 - x} \quad 12. \quad f(x) = \frac{-4x+2}{7x-1}$$

$$\text{HA: NONE} \quad \text{HA: } y = \frac{-4}{7}$$

TOP
BOTTOM

HORIZONTAL ASYMPTOTE

CASE 1: DEGREE OF TOP IS LARGER
H. A. : NONE

CASE 2: DEGREE OF BOTTOM IS LARGER
H. A. : $y=0$

CASE 3: DEGREES ARE SAME
ex: $y = \frac{5x^3 - 2x + 1}{7 - 4x^3}$

$$\text{HA: } y = \frac{5}{-4}$$