

$$1. f(x) = \frac{(x+2)}{(x^2-7x)} \text{ (GCF)}$$

$$= \frac{x+2}{x(x-7)}$$

FINDING VERTICAL ASYMPTOTES

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

$$x(x-7) = 0$$

$$x=0 \quad x-7=0$$

$$x=0 \quad x=7 \quad \text{V.A.}$$

$$2. f(x) = \frac{(x^2-12x+32)}{(x^2-16)} \text{ (PSD)}$$

$$\text{① } = \frac{(x-8)(x-4)}{(x+4)(x-4)} \text{ (DOTS)}$$

$$\text{② } = \frac{x-8}{x+4}$$

$$\text{③ } x+4=0$$

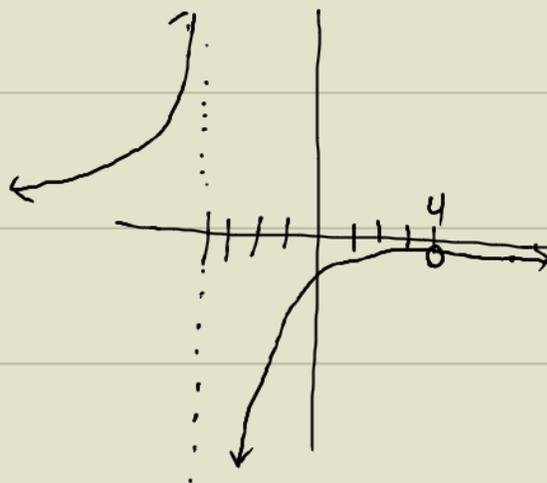
$$x=-4 \quad \text{VA}$$

$$x^2-16=0$$

$$x^2=16$$

$$x=\pm\sqrt{16}$$

$$x\neq\pm 4$$



$$3. \lim_{x \rightarrow 3^-} \frac{1}{(x-3)} \quad \text{LEFT HAND SIDE}$$

$$= (-\infty)$$

$$4. \lim_{x \rightarrow 4^+} \frac{(2x+1)}{(x-4)} \quad \text{RIGHT HAND SIDE}$$

$$= (\infty)$$

$$5. \lim_{x \rightarrow \infty} \left(2 + \frac{4}{x}\right)$$

$$= 2 + \frac{4}{\infty}$$

$$= 2 + 0$$

$$= (2)$$

$$\frac{1}{1} \quad \frac{1}{10} \quad \frac{1}{100} \quad \frac{1}{1000000} \quad \frac{1}{\infty}$$

$$= 1 \quad = .1 \quad = .01$$