

## 1.5 Infinite Limits

A. Given  $f(x) = \frac{3}{x-2}$

- Discontinuity
- $\mathbb{N}\mathbb{R}$
- $x=2$
- $\mathbb{R}, x \neq 2$

$$f(x) = \frac{3}{x-2}$$

$$\lim_{x \rightarrow 2^-} f(x) = -\infty$$

$$\lim_{x \rightarrow 2^+} f(x) = +\infty$$

x	f
1.9	-30
1.99	-300
1.999	-3000
2.1	+
2.01	+
2.001	+

$\infty$   
 $\infty$

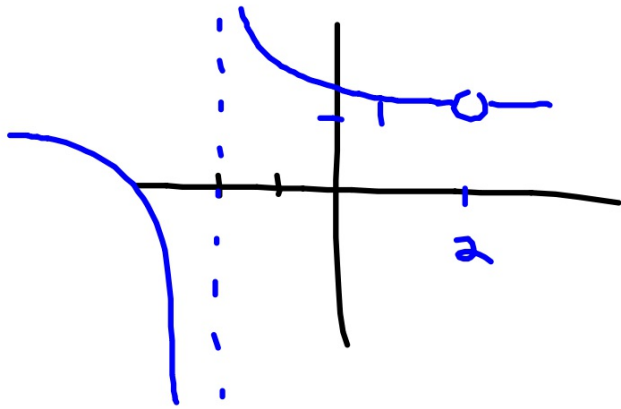
B. Asymptote - lines where a function  
DNE

Ex.  $\frac{1}{x-3}$   $x=3$  VA

$$\begin{array}{l} x-2=0 \\ +2 \quad +2 \\ x=2 \end{array}$$

Ex.  $\frac{x^2+2x-8}{x^2-4} = \frac{(x+4)(\cancel{x-2})}{(x+2)(\cancel{x-2})}$

$$x = -2$$



Ex.  $\frac{\lambda^2 - \lambda - 20}{\lambda^2 - 16} = \frac{(\lambda - 5)(\cancel{\lambda + 4})}{(\lambda - 4)(\cancel{\lambda + 4})}$

VA(s)?  $\lambda = 4$  ←

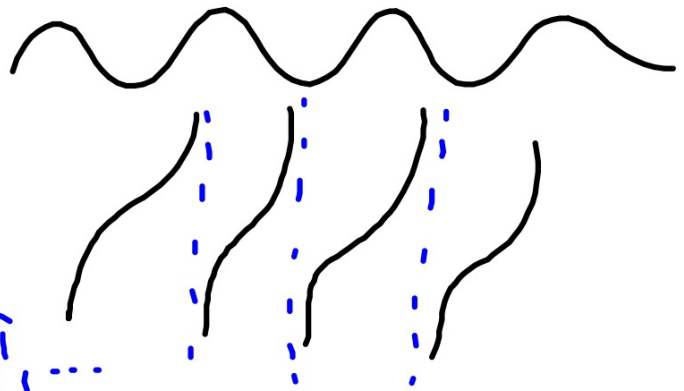
∴

C. Trig

1.  $\frac{1}{\cos x}$

$$\frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}, \frac{7\pi}{2}, \dots$$

$$\frac{n\pi}{2}, n \text{ is odd}$$



1.5 1-8

9-25 eoo

29-32

33-49 eoo