

2.2 day 2End Behavior Functions

Ex 1) $y = \frac{x + 2}{2x^2 + x + 7}$

Ex 2) $y = \frac{2x^2 + 7x - 5}{5x^2 + 3x - 1}$

Ex 3) $y = \frac{x^3 + 7x + 1}{x - 2}$

Ex 4) $y = \frac{5x}{x - 1}$

V. A. :

H.A.:

$f(x)$ is graphed below.

Ex 5) Find:

$$f(2) =$$

$$f(1) =$$

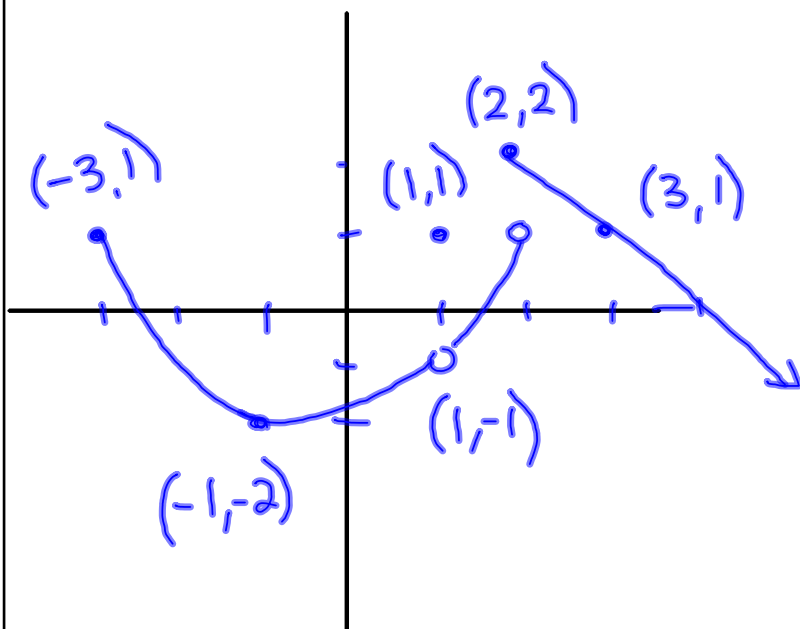
$$\lim_{x \rightarrow 2^+} f(x) =$$

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

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

$$\lim_{x \rightarrow 1} f(x) =$$

$$\lim_{x \rightarrow -3} f(x) =$$



Ex 6)

$$f(x) = \begin{cases} 2x - 3 & x \leq 2 \\ x^2 + a & x > 2 \end{cases}$$

Find the value of a such $\lim_{x \rightarrow 2} f(x) = 1$

Ex 7) Given $y = \frac{ax + b}{x + c}$

Find $a - b + c$.

Horizontal asym @ $y = -2$

Vertical asym @ $x = 4$

x-int @ $x = 1.5$

$$\lim_{x \rightarrow \infty} \frac{1 - \cos x}{x^2} = 0 \quad -1 \leq \cos x \leq 1$$

$$\frac{1-1}{x^2} \leq \frac{1-\cos x}{x^2} \leq \frac{1-(-1)}{x^2}$$

$$\lim_{x \rightarrow \infty} 0 \leq \lim_{x \rightarrow \infty} \frac{1-\cos x}{x^2} \leq \lim_{x \rightarrow \infty} \frac{2}{x^2}$$

$$0 \leq \leq 0$$