

SECTION 4.6: LIMITS AT INFINITY AND ASYMPTOTES (DAY 1)

1. Limits at Infinity: In plain English, what should the symbols below mean?

$$\lim_{x \rightarrow \infty} f(x) = L$$

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

2. Using the calculating tool of your choice, determine the limits below or determine that the limit does not exist.

(a) $\lim_{x \rightarrow \infty} \frac{3x + \sin(x)}{x}$

(b) $\lim_{x \rightarrow -\infty} \frac{2x + 1}{\sqrt{x^2 + 1}}$

(c) $\lim_{x \rightarrow \infty} \frac{1}{x}$