Limits

Large numbers and small numbers

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

What is a limit

Let f have domain $R/\{2\}$

$\lim_{x \to 2} f(x) = 1$ or $f(x) \to 1$ as $x \to 2$

Let f have domain R and $f(2)$ is exist

Left-hand, right-hand, and two-sided limits

$\lim_{x \to 3^-} h(x) = 1$ and $\lim_{x \to 3^+} h(x) = -2$

$\lim_{x \to 3} h(x) = ?$

The regular 2-sided limit at $x = a$ exists **exactly when** both left-hand and right-hand limits at $x = a$ exist **and are equal to each other**

Limits at ∞ and $-\infty$

“vertical asymptote"

$f(x) = sin(\frac{1}{x})$