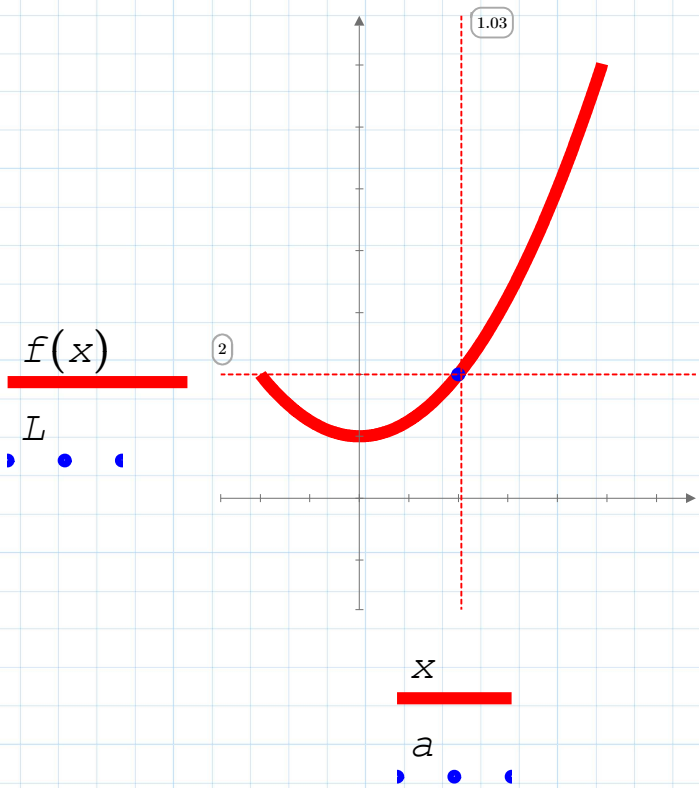
The concept of a Limit

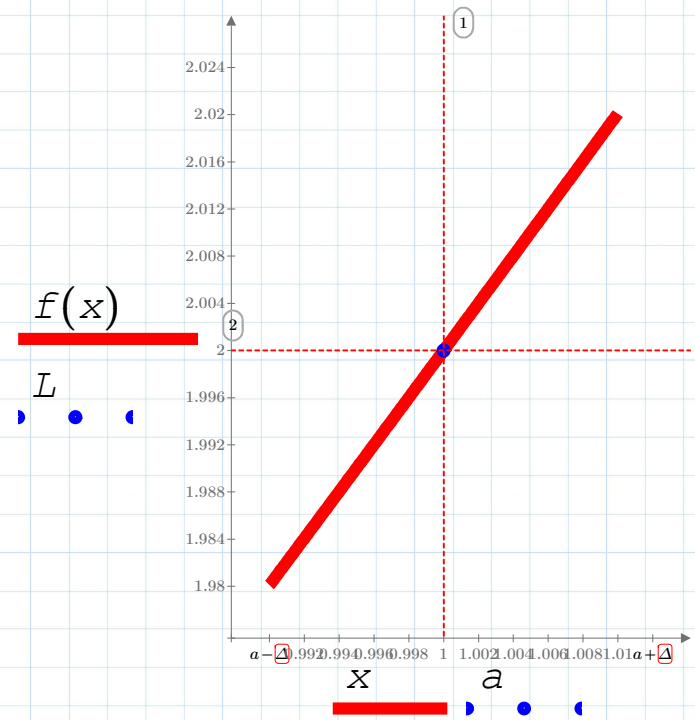
$f(x) := x^2 + 1$

$$\lim_{x \to a} f(x) \to a^2 + 1$$

$a := 1$ $\qquad$ $L := f(a)$

$f(a) = 2$

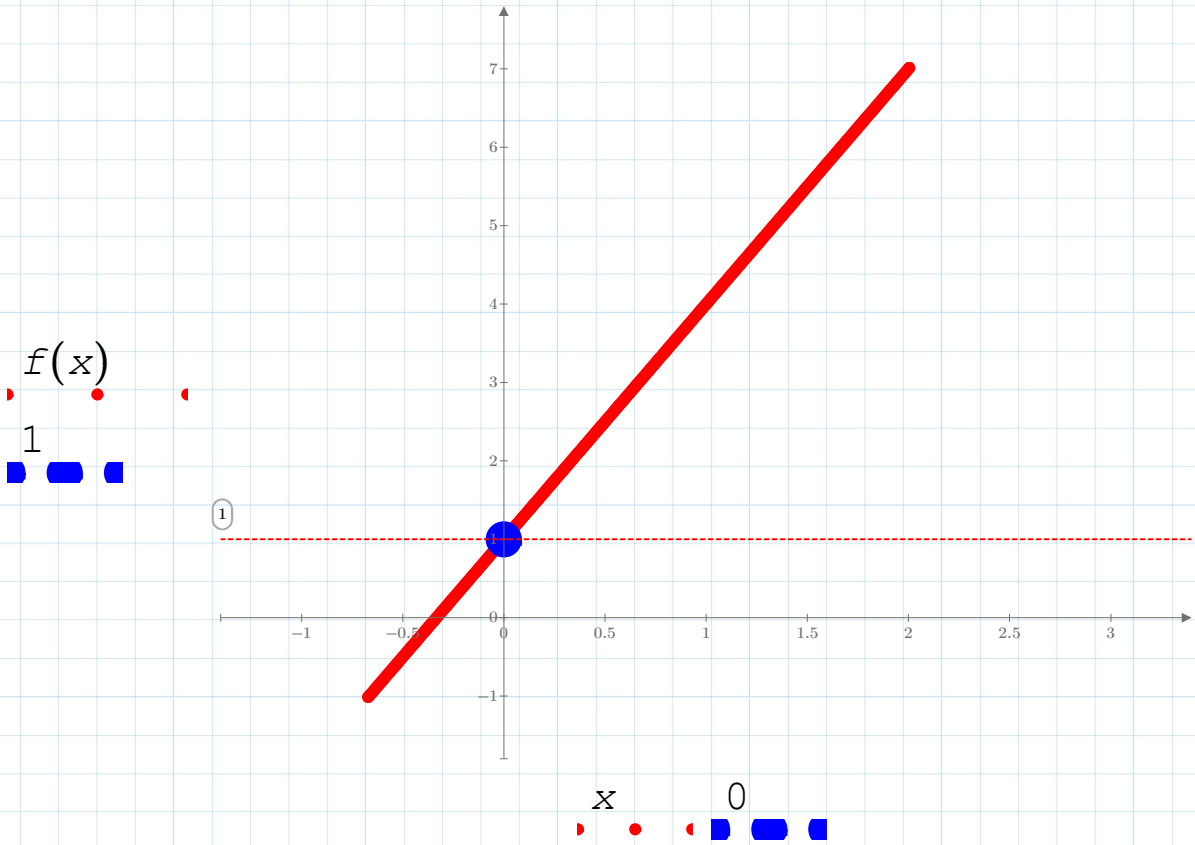




Example

$$f(x) := \frac{3 \cdot x^2 + x}{x}$$

$$\lim_{x \to 0} f(x) \to 1$$



$$x := -0.005 \qquad \frac{3 \cdot x^2 + x}{x} = 0.985$$

$$x := -0.001 \qquad \frac{3 \cdot x^2 + x}{x} = 0.997$$

$$x := 0.0002 \qquad \frac{3 \cdot x^2 + x}{x} = 1.001$$

References:

1. **G.Simmons.** Calculus With Analitic Geometry (1996): 2.5 (p.69).
2. **MIT** lection 12.02.2013