Scoping

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$$f(x) = \int_x^{2x} x\,dx = \int_x^{2x} t\,dt = \left[\frac{t^2}{2}\right]_x^{2x} = \frac{1}{2}\left((2x)^2 - x^2\right) = \frac{3x^2}{2}$$

DSL → δσλ

DSLsofMath

$f : \mathbb{R} \to \mathbb{R}$

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

$$\underline{g(s)} \stackrel{?}{=} x \cdot s$$

$$\underline{h(t)} = t$$

$$i(k) \stackrel{?}{=} f(a \cdot k) = \frac{3(a \cdot k)^2}{2}$$

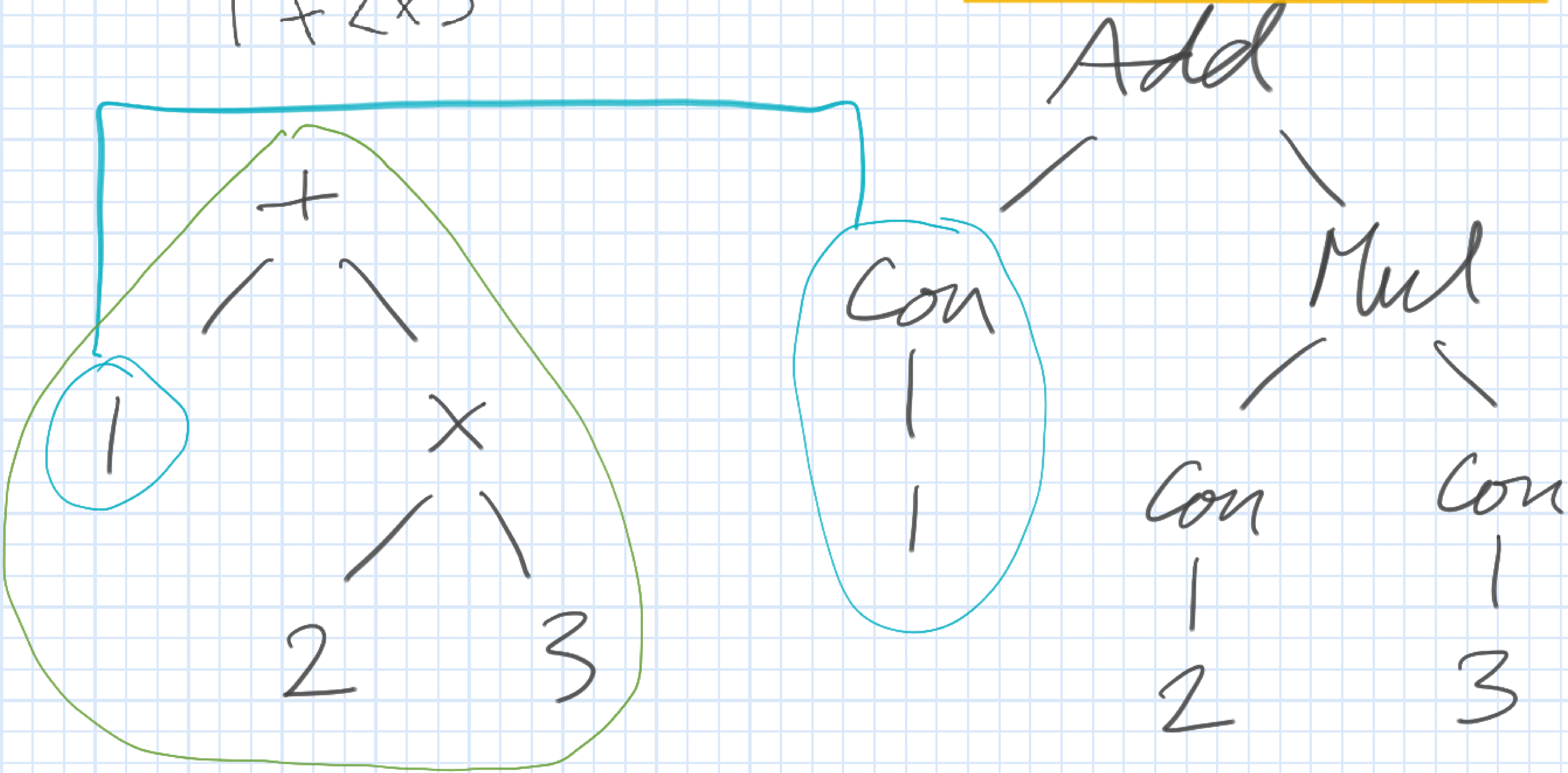
~~"the function $f(x)$"~~

"the function f"

$f(3) : \mathbb{R}$

Abstrakt syntax

$1 + 2 \times 3$



Types and their values

$Bool = \mathbb{B}$ $\{F, T\}$

$\mathbb{N}, \mathbb{Z}$ $\{0, 1, 2, 3, \ldots\}$

$\mathbb{Q}, \mathbb{R}, \mathbb{C}$

$\mathbb{B} \times \mathbb{B} = \{(F,F), (F,T), (T,F), (T,T)\}$

$\mathbb{B} \to \mathbb{B} = \{not, id, const\,T, const\,F\}$

$Table = S \to \mathbb{Z} = \{const\,0, const\,1738, \ldots, testTab, \ldots\}$