

$$\frac{\Gamma(x) = v}{\Gamma, x \Rightarrow \Gamma(x)}$$

→ nouvelle règle :

$$\frac{}{\Gamma, n \Rightarrow n}$$

$$\frac{\Gamma, e_1 \Rightarrow v_1 \quad \Gamma, e_2 \Rightarrow v_2 \quad v = v_1 + v_2}{\Gamma, e_1 + e_2 \Rightarrow v}$$

$$\frac{}{\Gamma, \text{fun } x \rightarrow e \Rightarrow \text{fun } x \rightarrow e}$$

$$\frac{\Gamma, e_1 \Rightarrow (\text{fun } x \rightarrow e) \quad \Gamma, e_2 \Rightarrow v \quad \Gamma\{x \rightarrow v\}, e \Rightarrow w}{\Gamma, e_1 e_2 \Rightarrow w}$$

ex: let $y = 2$
 let $\text{plus2} = \text{fun } x \rightarrow x + 2$ chaque fonction
 let $y = 3$ "save" l'env Γ
 plus2 7 (* retourne 3*) concret → statique

$$\hookrightarrow \frac{\Gamma, e_1 \Rightarrow (\text{fun } x \rightarrow e, \Gamma') \quad \Gamma, e_2 \Rightarrow v \quad \Gamma'\{x \rightarrow v\}, e \Rightarrow w}{\Gamma, e_1 e_2 \Rightarrow w}$$

$$\frac{}{\Gamma, \text{fun } x \rightarrow e \Rightarrow (\text{fun } x \rightarrow e, \Gamma')}$$

$$\frac{\Gamma, e_1 \Rightarrow v \quad \Gamma\{x \rightarrow v_1\}, e_2 \Rightarrow v_2}{\Gamma, \text{let } x = e_1 \text{ in } e_2 \Rightarrow v_2}$$

ex: let $x = 1$ in $2 + x$

substitution
 placer
 e, x par

$\Rightarrow w$

$$\frac{\frac{}{\phi, 1 \Rightarrow 1} \quad \frac{\frac{\Gamma(x) = 2}{\{x \rightarrow 1\}, 2 \Rightarrow 2} \quad \{x \rightarrow 1\}, 2 + x \Rightarrow 3}{\phi, \text{let } x = 1 \text{ in } 2 + x \Rightarrow 3}}$$

↳ dérivation / preuve