λ - CALCULUS

$$f(x) = 2x + x^2$$
$$f(y) = 2y + y^2$$

$$\int_0^1 x^2 \, dx \qquad \int_0^1 y^2 \, dy$$

$$f(y) = 2x + x^2$$

$$\text{fix}(f) \qquad F(f) = \ldots f(\ldots) \ldots$$

$$x \in Var$$
$$e ::= x \qquad |$$
$$\qquad \lambda x . e |$$
$$\qquad e_1 \, e_2$$

$f(x) = x^2 + 2$
$\lambda x . x^2 + 2$

fun x ->
x * x + 2

$e_1 (e_2)$

$(x) \Rightarrow e$

$e_1 \quad e_2$

function (x) {
  return e;
}

lambda x: x*x+2

$\lambda x. x$ IDENTITY

$\lambda x. y$

$\lambda y. x$

$f\ x$

COMP := $\lambda f. \lambda g. \lambda x. f\ (g\ x)$

$\lambda f, g. \lambda x. f\ (g\ x)$

$(\lambda f.\ f2\ + f3)$

$(\ \text{COMP}\ (\lambda x.\ x^2)\ (\lambda x.\ x+2))$