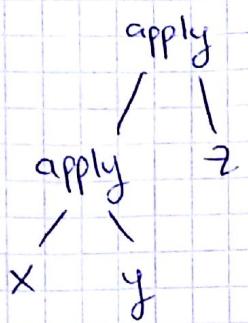


ל-3 סעיפים תכונת

$x^y t$

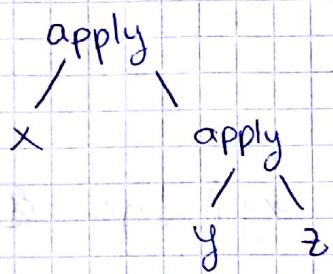


נווה מילוי.

1

386

$$\times (y \neq)$$



ט. ניגע תרגום

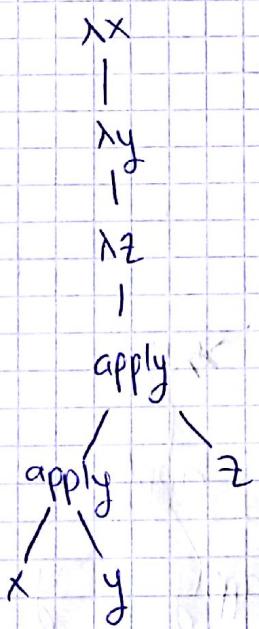
14

۵۶۷

$$\lambda x. \lambda y. \lambda z. x y z$$

נִזְבֵּן כָּל

2467



$\lambda x.y \lambda z.$

lambda calculus

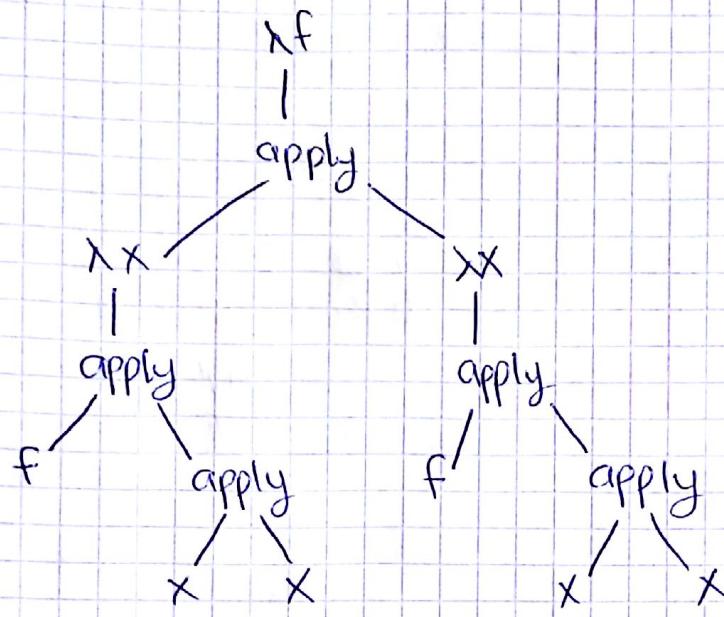
! נסיגת צבאות נאשין

Variable abstraction	ICF
Application	ICF

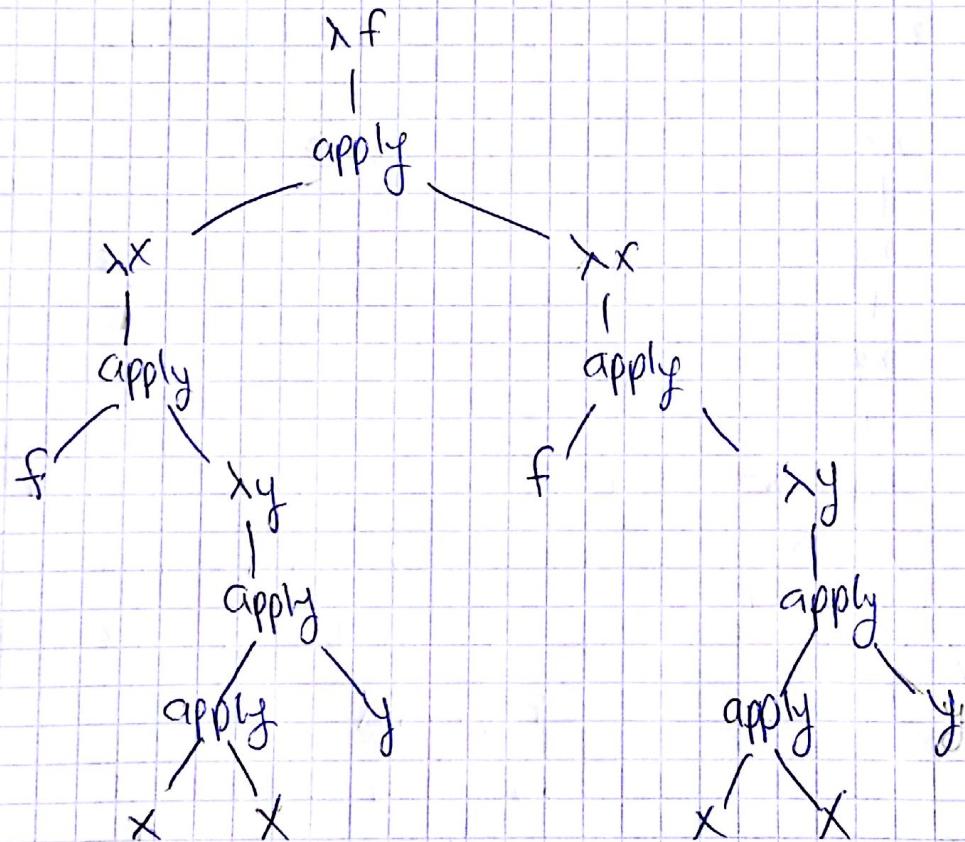
6

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

right assoc. (e)



$\lambda f. (\lambda x. f(\lambda y. x x y))(\lambda x. f(\lambda y. x x y))$!.n.m (f)



test fls a b Δ

סבבון גיבובן

.@

~~X1. X2. X3. f(x) = a - b~~

(x_1, x_m, x_n . | $m < n$) ffs a b \Rightarrow

$(x_m, x_n \text{ fts } m \text{ n}) \text{ a b} \Rightarrow$

(λ_m. f(s a n)) b ⇒

$$f \circ a = b \triangleq$$

$$(\lambda t. \lambda f. f) \ a \ b \Rightarrow$$

$$(\lambda f. f) b \Rightarrow$$

٦

ב. רצף כיוון נסמן בפונטינית היראה

⊕ $\text{not } x \triangleq \lambda x. \text{ test } x \text{ fils true}$

וְאֵל הַגָּנוּתָה שֶׁבְּנִיר test וְאֵל הַגָּנוּתָה שֶׁבְּנִיר

15. `km` true `Spn` `km` `Plc` b `nic` `km` `km` `km` `false`

.a nc

X IN plan test f ps

"b" no isn't a good idea, false won't x pic

not x=true \wedge y<1 true - if

הנ"מ - "א" הוא ספרו הראשון,>true ist x не

(not x = false) 11575 1251 false -1156

$$\textcircled{3} \quad \text{OR} \rightarrow b \ c = \lambda b. \lambda c. ((b \ \text{tru}) \ c)$$

λx	b	c	b	tru	c	$\stackrel{\circ}{=}$	"wk"	$\text{f}(\text{c})$	$\lambda(x)$
tru	tru	tru	true	tru	tru	$= (\lambda t. \lambda f. t)(\text{tru} \text{ tru})$	$= \text{tru}$	$\text{f}(\text{c})$	$\lambda(x)$
tru	tru	fls	true	fls	$\text{f}(\text{ls})$	$= (\lambda t. \lambda f. t)(\text{tru} \text{ fls})$	$= \text{fls}$	$\text{f}(\text{c})$	$\lambda(x)$
true	fls	tru	fls	tru	$\text{f}(\text{c})$	$= (\lambda t. \lambda f. f)(\text{true} \text{ tru})$	$= \text{true}$	$\text{f}(\text{c})$	$\lambda(x)$
fls	fls	fls	fls	$\text{f}(\text{ls})$	$\text{f}(\text{c})$	$= (\lambda t. \lambda f. f)(\text{true} \text{ fls})$	$= \text{fls}$	$\text{f}(\text{c})$	$\lambda(x)$

$$\text{XOR } a b \triangleq \lambda a. \lambda b. \text{and } a (\text{not } b)$$

$$\lambda a. \lambda b. \text{test } a (\text{not } b) - b$$

~~innermost of CNG~~

a	b	$\lambda a. \lambda b. \text{test } a (\text{not } b)$	$\lambda a. \lambda b. \text{and } a (\text{not } b)$
1	1	0	1
1	0	1	0
0	1	1	0
0	0	0	1

$$\text{XOR } a b \triangleq \lambda a. \lambda b. \text{test } a (\text{not } b) - b$$

$$\text{true XOR } b = \text{not } b \quad \text{suppose } \rightarrow \text{if true}$$

$$\text{false XOR } b = b$$

. a se istb nu test . if true
 not b true if false
 b false then
 . benn b false true then

: SCC C means return ③

$$\text{SCC } C_0 \triangleq$$

$$(\lambda n. \lambda s. \lambda z. s (n s z)) C_0 \Rightarrow$$

$$\lambda s. \lambda z. s (C_0 s z) \triangleq$$

$$\lambda s. \lambda z. s ((\lambda s. \lambda z. z) s z) \Rightarrow$$

$$\lambda s. \lambda z. s (z z) \Rightarrow$$

$$\lambda s. \lambda z. s z \triangleq C_1$$

$$\text{SCC } C_0 \triangleq (\lambda n. \lambda s. \lambda z. s (n s z)) C_0 \quad . b$$

$$\Rightarrow \lambda s. \lambda z. s (C_0 s z) \triangleq$$

$$\lambda s. \lambda z. s ((\lambda s. \lambda z. z) s z)$$

"B1B2" ref recursive value of 101 "JN'D 33D - pCNG reek ic

plus 1 (למעלה 1)

(b) (3)

- . ג. סדרה סדרתית $c_1 - \gamma$ הינה סדרה כפנית $c_{n+1} = c_n + \frac{1}{c_n}$ $c_1 = 1$ $c_2 = 2$ $c_3 = 3$ $c_4 = 4$ $c_5 = 5$ $c_6 = 6$ $c_7 = 7$ $c_8 = 8$ $c_9 = 9$ $c_{10} = 10$ $c_{11} = 11$ $c_{12} = 12$ $c_{13} = 13$ $c_{14} = 14$ $c_{15} = 15$ $c_{16} = 16$ $c_{17} = 17$ $c_{18} = 18$ $c_{19} = 19$ $c_{20} = 20$

plus 1 -> סדרה (c) (3)

$$svcc \stackrel{\Delta}{=} \text{plus } c_1$$

$$\begin{aligned} &= (\lambda m. \lambda n. \lambda s. \lambda z. m s (n s z)) \lambda s. \lambda z. s z \\ &\stackrel{\Delta}{=} (\lambda m. \lambda n. \lambda s. \lambda z. m s (n s z)) (\lambda x. \lambda y. x y) \\ &\Rightarrow \lambda n. \lambda s. \lambda z. (\lambda x. \lambda y. x y) s (n s z) \\ &\Rightarrow \lambda n. \lambda s. \lambda z. \lambda y s y (n s z) \\ &\Rightarrow \lambda n. \lambda s. \lambda z. s(n s z) = svcc \end{aligned}$$

$$\text{Power} = d \times \lambda y - x y$$

6

power C_2 C_3 =

$$(\lambda x. \lambda y. x y) c_2 c_3 \Rightarrow$$

$$(x_2 - y) \in S \Rightarrow$$

$$C_2 - C_3 \Rightarrow$$

$$c_2 \ c_3 \Rightarrow \overbrace{(\lambda s. \lambda z. s(s z))}^{c_3} =$$

$$(\lambda z. \ c_3 \ (c_3 \ z)) =$$

$$x_2, c_3 (_s. x_2 \ s(s(s_2))) \ z) \Rightarrow$$

$$\forall z. C_3 (\wedge_{\mathcal{B}} \exists (z (z \in y))) \Rightarrow$$

$$\lambda z. (\lambda a. \lambda b. (a(a(ab))))(\lambda y. z(z(z y))) \Rightarrow$$

$$\lambda z. \lambda b (y (z b z (zy))) \neq (\lambda y. (z (z (zy))))$$

$$(xy \cdot (t(z(z(y)))) \ b) \Rightarrow$$

$$\lambda x. \lambda b (\lambda y. (z(z(z(y)))))$$

$$1y \cdot (z(z(z y)))$$

$$\cancel{z} : (z(z(z(y)))) \rightarrow$$

$\Delta z . \lambda b . (\lambda y . (z (z (zy))))$

$$(z(z(z(z(z(z(y))))))) \Rightarrow$$

$\vdash \lambda b. (\exists x (\forall y (\exists z (\forall w (\exists t (\forall u (\exists v (\exists s (\forall r (\exists q (\exists p (\exists q' (\exists r' (\exists s' (\exists t' (\exists u' (\exists v' (\exists w' (\exists z' (\exists y' (\exists x' (\exists b))))))))))))))))))))$

Cg

$$isZero \stackrel{\Delta}{=} \lambda z. z (\lambda y. f|s) \text{ true}$$

②

$$isZero C_0 \stackrel{\Delta}{=}$$
$$\left[C_0 = \lambda s. \lambda z. z \right]$$

$$(\lambda z. z (\lambda y. f|s) \text{ true}) (\lambda s. \lambda z. z) \Rightarrow$$

$$(\lambda s. \lambda z. z) (\lambda y. f|s) \text{ true} \Rightarrow$$

$$\lambda z. z \text{ true} \Rightarrow$$

true

$$isZero C_1 \stackrel{\Delta}{=}$$

$$(\lambda z. z (\lambda y. f|s) \text{ true}) (\lambda s. \lambda z. s z) \Rightarrow$$

$$(\lambda s. \lambda z. s z) (\lambda y. f|s) \text{ true} \Rightarrow$$

$$(\lambda z. (\lambda y. f|s) z) \text{ true} \Rightarrow$$

$$(\lambda y. f|s) \text{ true} \Rightarrow$$

f|s