

$$T_0 = E\text{-closure}(0) = \overset{1}{0}, \overset{2}{2}, \overset{3}{4}, \overset{0}{3}, \overset{0}{5}, \overset{4}{10}, \overset{4}{11}, \overset{4}{26} \quad \checkmark$$

$$T_1 = E\text{-closure}(g(T_0, \text{CODE})) = E\text{-closure}(1) = 1$$

$$\begin{aligned} T_2 &= E\text{-closure}(S(T_0, V\text{DECL})) = E\text{-closure}(6) \\ &= 6, 3, 5, 2, 10, 11, 4, 26 \end{aligned}$$

$$\begin{aligned} T_3 &= E\text{-closure}(g(T_0, F\text{DECL})) = E\text{-closure}(7) \\ &= 7, 3, 5, 2, 10, 11, 4, 26 \end{aligned}$$

$$\begin{aligned} T_4 &= E\text{-closure}(S(T_0, \text{rtype})) = E\text{-closure}(12, 13, 27) \\ &= 12, 13, 16, 27 \end{aligned}$$

$$\begin{aligned} \rightarrow T_1 &= \overset{0}{1}, \overset{1}{2}, \overset{0}{3}, \overset{0}{4}, \overset{2}{5}, \overset{4}{10}, \overset{3}{11}, \overset{4}{26} \\ T_2 &= 6, 3, 5, 2, 10, 11, 4, 26 \quad \checkmark \end{aligned}$$

$$T_5 = E\text{-closure}(g(T_2, \text{CODE})) = E\text{-closure}(8) = 8$$

$$T_6 = E\text{-closure}(S(T_2, V\text{DECL})) = E\text{-closure}(6) = T_2 =$$

$$T_7 = E\text{-closure}(g(T_2, F\text{DECL})) = E\text{-closure}(7) = T_3$$

$$T_8 = E\text{-closure}(S(T_2, \text{rtype})) = E\text{-closure}(12, 13, 27) = T_4$$

$$\rightarrow T3 = \frac{1 \ 0 \ 9 \ 2 \ 3 \ 3 \ 4 \ 3}{7 \ 3 \ 5 \ 2 \ 19 \ 11 \ 4 \ 26} \checkmark$$

Date.

No.

$$T6 = E\text{-closure}(SCT3, VDECL) = E\text{-closure}(9) = 9$$

$$T7 = E\text{-closure}(S(T3, VDECL)) = E\text{-closure}(6) = T2$$

$$T8 = E\text{-closure}(S(T3, VTYPE)) = E\text{-closure}(12, 13, 21) = T4$$

$$T9 = E\text{-closure}(S(T3, FDECL)) = E\text{-closure}(7) = T3$$

$$\rightarrow T4 = \frac{1 \ 2 \ 1 \ 1}{12 \ 13 \ 18 \ 27} \checkmark$$

$$T10 = E\text{-closure}(S(T4, id)) = E\text{-closure}(14, 19, 28) \\ = 14, 19, 28$$

$$T11 = E\text{-closure}(S(T4, ASSIGN)) = E\text{-closure}(15) = 15$$

$$\rightarrow T5 = 8$$

$$T6 = 9, 1, 2, 3$$

$$T7 = 14, 19, 28 \quad \checkmark$$

$$T8 = E\text{-closure}(S(T7, SEMI)) = E\text{-closure}(6) = 16$$

$$T9 = E\text{-closure}(S(T7, ASSIGN)) = E\text{-closure}(20) = 20, 21, 59, 60, 65 \\ 69, 71, 72, 73, 74, 22$$

$$T10 = E\text{-closure}(S(T7, PAREN)) = E\text{-closure}(29) \\ = 29, 36, 40, 41$$

$$\rightarrow T8 = 15$$

$$T12 = E\text{-closure}(S(18, \text{sem})) = E\text{-closure}(17) = 17$$

$$\begin{aligned} \rightarrow T9 &= 1^9, 2^3, 3^3, 4^4, 5^4, 6^5, 7^6, 8^7, 9^9 \\ \checkmark T10 &= 20, 21, 54, 67, 65, 69, 71, 72, 73, 74, 22 \\ &\quad \text{Note: } 6^2, 7^2 \end{aligned}$$

$$T13 = E\text{-closure}(S(T10, \text{RHS})) = E\text{-closure}(24) = 24$$

$$T14 = E\text{-closure}(S(T10, \text{EXPR})) = E\text{-closure}(25) = 25$$

$$T15 = E\text{-closure}(S(T10, \text{TERM})) = E\text{-closure}(61, 62) = 61, 62$$

$$T16 = E\text{-closure}(S(T10, \text{FATOR})) = E\text{-closure}(66, 70) = 66, 70$$

$$T17 = E\text{-closure}(S(T10, \text{num})) = E\text{-closure}(80) = 80$$

$$T18 = E\text{-closure}(S(T10, \text{id})) = E\text{-closure}(79) = 79$$

$$T19 = E\text{-closure}(S(T10, \text{float})) = E\text{-closure}(78) = 78$$

$$\begin{aligned} T20 &= E\text{-closure}(S(T10, \text{paren})) = E\text{-closure}(75) \\ &= 75, 54, 60, 65, 69, 71, 72, 73, 74 \end{aligned}$$

$$\rightarrow T11 = 2^9, 3^6, 4^9, 4^9$$

$$T38 = E\text{-closure}(S(T10, \text{literal})) = E\text{-closure}(23) = 23$$

$$T21 = E\text{-closure}(S(T11, \text{ARG})) = E\text{-closure}(30) = 30$$

$$T22 = E\text{-closure}(S(T11, \text{vtype})) = E\text{-closure}(37) = 37$$

$$\begin{array}{rcl} & = 720 \\ & = 719 \\ & = 718 \end{array}$$

↑  
puren  
final  
id

$$T26 = E\text{-closure}(G(720, \text{fun})) = E\text{-closure}(80) = 717$$

$$T26 = E\text{-closure}(G(720, \text{factor})) = E\text{-closure}(66, 70) = 716$$

$$T26 = E\text{-closure}(G(720, \text{term})) = E\text{-closure}(61, 62) = 715$$

$$T25 = E\text{-closure}(G(720, \text{expr})) = E\text{-closure}(6) = 7$$

$$\begin{array}{ccccccccc} T20 & = & 75, & 59, & 60, & 65, & 64, & 71, & 72, & 73, & 74 \\ T19 & = & 78, & 2, & 2, & 3, & 3, & 4, & 5, & 6, & 7 \\ T18 & = & 79, & & & & & & & & \end{array}$$

$$\begin{array}{c} 717 = 80 \\ \downarrow \end{array}$$

$$= 69, 65, 69, 71, 72, 73, 74$$

$$T24 = E\text{-closure}(G(716, \text{multi})) = E\text{-closure}(6)$$

$$\hookrightarrow 716 = 66, 70$$

$$= 63, 60, 59, 65, 69, 71, 72, 73, 74$$

$$T23 = E\text{-closure}(G(715, \text{addsub})) = E\text{-closure}(63)$$

$$T15 = 61, 62$$

$$T14 = 25$$

$$T13 = 29$$

$$\hookrightarrow T12 = 17$$

$$\rightarrow T21 = 30$$

$$T26 = E\text{-closure}(S(T21, r\text{paren})) = E\text{-closure}(31) = 31$$

$$\rightarrow T22 = 37$$

$$T27 = E\text{-closure}(S(T21, id)) = E\text{-closure}(GB) \\ = 38, 42, 43, 45$$

$$\rightarrow T23 = \frac{1}{63}, \frac{2}{60}, \frac{2}{59}, \frac{3}{65}, \frac{3}{64}, \frac{4}{71}, \frac{5}{72}, \frac{6}{73}, \frac{7}{74}$$

$$T28 = E\text{-closure}(S(T23, EXP)) = E\text{-closure}(64) = 64$$

~~$$T29 = E\text{-closure}(S(T23, TERM)) = E\text{-closure}(61, 62) = T15$$~~

~~$$T29 = E\text{-closure}(S(T23, FACTOR)) = E\text{-closure}(66, 70) = T16$$~~

$$T29 = E\text{-closure}(S(T23, num)) = E\text{-closure}(80) = T17$$

↓	id	= T18
	float	= T19
	lparen	= T20

$$\rightarrow T24 = \frac{1}{67}, \frac{2}{65}, \frac{2}{64}, \frac{3}{71}, \frac{4}{72}, \frac{5}{73}, \frac{6}{74}$$

~~$$T29 = E\text{-closure}(S(T24, TERM)) = E\text{-closure}(68) = 68$$~~

↓	FACTOR	= T16
	num	= T17
	id	= T18
	float	= T19
	lparen	= T20

$$\rightarrow T25 = \eta^1_6$$

$$T30 = G\text{-closure}(S(T26, rparen)) = E\text{-closure}(\eta\eta) = \eta\eta$$

$$\rightarrow T26 = 3^1$$

$$T31 = G\text{-closure}(S(T26, lbrace)) = E\text{-closure}(32)$$

$$= 32, 54, 85, 86, 87, 88, 89, 95, 97, 10, 11, 18$$

$$\rightarrow T27 = 3^1_8, 4^2_2, 4^0_3, 4^0_5$$

$$T32 = G\text{-closure}(S(T27, MOREARGS)) = E\text{-closure}(39) = 39$$

$$T33 = G\text{-closure}(S(T27, comma)) = E\text{-closure}(44) = 44$$

$$\rightarrow T28 = 24$$

$$T29 = 68$$

$$T30 = \eta^0_7$$

$$T31 = 3^1_2, 5^2_4, 8^3_5, 8^4_6, 8^5_7, 8^6_8, 8^7_9, 8^8_{10}, 8^9_{11}, 9^0_{12}, 9^1_{13}, 9^2_{14}, 9^3_{15}, 9^4_{16}, 9^5_{17}, 9^6_{18}$$

$$T34 = E\text{-closure}(S(T31, Block)) = E\text{-closure}(33) = 33, 49$$

$$T35 = G\text{-closure}(S(T31, STM)) = E\text{-closure}(56) = 56, 54, 55, 57$$

$$T36 = G\text{-closure}(S(T31, VDECL)) = E\text{-closure}(90) = 90$$

$$T37 = E\text{-closure}(S(T31, ASSIGN)) = E\text{-closure}(91) = 91$$

$$T40 = E\text{-closure}(S(T31, it)) = E\text{-closure}(93) = 93$$

$$T39 = E\text{-closure}(S(T31, \text{while})) = E\text{-closure}(94) = 94$$

$$T40 = E\text{-closure}(S(T31, \text{return})) = E\text{-closure}(95) = 95$$

$$T41 = E\text{-closure}(S(T31, \text{type})) = E\text{-closure}(12, 13, 18)$$

T)  $T58 = E\text{-closure}(S(T31, \text{id})) = E\text{-closure}(9) = 9$

$$\rightarrow T32 = 3^{\circ}9$$

$$T33 = 4^{\circ}4$$

$$T42 = E\text{-closure}(S(T33, \text{type})) = E\text{-closure}(46) = 46$$

$$\rightarrow T34 = 3^1, 3^2, 4^{\circ}9$$

$$T43 = E\text{-closure}(S(T34, \text{return})) = E\text{-closure}(34) = 34$$

$$T44 = E\text{-closure}(S(T34, \text{return})) = E\text{-closure}(50) \\ = 50, 71, 72, 73, 74$$

$$\rightarrow T35 = 5^1, 5^2, 5^{\circ}5, 5^{\circ}7$$

$$T45 = E\text{-closure}(S(T35, \text{Block})) = E\text{-closure}(58) = 58$$

$$E\text{-closure}(S(T35, \text{stmt})) = E\text{-closure}(56) = T35$$

$$\rightarrow T36 = 9^{\circ}0$$

$$T37 = 9^{\circ}1$$

$$T46 = E\text{-closure}(S(T37, \text{semi})) = E\text{-closure}(92) = 92$$

$\rightarrow T38 = 2^3$

$$T47 = E\text{-closure}(S(T38, it)) = E\text{-closure}(93) = 93 \quad \rightarrow 2^3, \quad \cancel{X}$$

$\rightarrow T39 = 9^4$

$$T48 = E\text{-closure}(S(T39, pattern)) = E\text{-closure}(97) \\ = 97, 81, 71, 72, 73, 74$$

$\rightarrow T40 = 9^5$

$$T49 = E\text{-closure}(S(T40, pattern)) = E\text{-closure}(98) = 98, 18$$

$\rightarrow T41 = 1^2, 1^3, 1^8$

$$T50 = E\text{-closure}(S(T41, id)) = E\text{-closure}(1^4, 1^9) = 19, 19$$

~~$T51 = E\text{-closure}(S(T41, ASSIGN)) = E\text{-closure}(15) = T8$~~

$\oplus \rightarrow T58 = 1^9$

~~$T59 = E\text{-closure}(S(T58, assign)) = E\text{-closure}(2^9) = T10$~~

$\rightarrow T42 = 4^6$

~~$T51 = E\text{-closure}(S(T42, id)) = E\text{-closure}(4^7) = 47, 42, 43, 45$~~

$$\rightarrow T43 = 34$$

$$T52 = E\text{-closure}(S(T43, \text{brace})) = E\text{-closure}(35) = 35$$

$$\rightarrow T44 = 5^1, 7^2, 1^3, 7^4, 7^5$$

$$T53 = E\text{-closure}(S(T44, \text{FACTOR})) = E\text{-closure}(52) = 52$$

↓	num	= T17
	id	= T18
	float	= T19
	lparen	= T20

$$\rightarrow T45 = 58$$

$$T46 = 9^2$$

$$T47 = 9^3$$

$$T54 = E\text{-closure}(S(T47, \text{lparen})) = E\text{-closure}(96)$$

$$= 96, 81, h1, h2, h3, h4$$

$$\rightarrow T48 = a^1, 8^1, h^2, h^1, h^2, h^3, h^4$$

$$T55 = E\text{-closure}(S(T48, \text{COND})) = E\text{-closure}(100) = 100$$

$$T56 = E\text{-closure}(S(T48, \text{FACTOR})) = E\text{-closure}(82) = 82$$

↓	num	= T17
	id	= T18
	float	= T19
	lparen	= T20

$$\rightarrow T49 = \frac{1}{18}, \frac{2}{18}$$

$$T51 = E\text{-closure}(S(T49, \text{ASSIGN})) = E\text{-closure}(101) = 101$$

$$T52 = E\text{-closure}(S(T49, \text{id})) = E\text{-closure}(19) = T58$$

$$\rightarrow T50 = \frac{1}{14}, \frac{2}{19}$$

$$T53 = E\text{-closure}(S(T50, \text{semi})) = E\text{-closure}(16) = T9$$

$$T54 = E\text{-closure}(S(T50, \text{assign})) = E\text{-closure}(20) = T10$$

$$\rightarrow T51 = \frac{1}{41}, \frac{2}{42}, \frac{3}{43}, \frac{4}{44}$$

$$T55 = E\text{-closure}(S(T51, \text{MOREARGS})) = E\text{-closure}(48) = 48$$

$$T56 = E\text{-closure}(S(T51, \text{comma})) = E\text{-closure}(49) = T33$$

$$\rightarrow T52 = 35$$

$$T53 = 52$$

$$T50 = E\text{-closure}(S(T53, \text{semi})) = E\text{-closure}(53) = 53$$

$\rightarrow T54 = a^1_6, s^1_1, \eta^2_1, \eta^2_2, \eta^3_3, \eta^4_4$

$$T61 = E\text{-closure}(S(T54, \text{CMD})) = E\text{-closure}(a^1_9) = a^1_9$$

↓	FACTOR	= T56
	num	= T17
	id	= T18
	float	= T19
	lparen	= T20

$$\rightarrow T55 = a^1_1$$

$$T62 = E\text{-closure}(T55, rparen)) = E\text{-closure}(a^1_3) = a^1_3$$

$$\rightarrow T56 = a^1_2$$

$$T63 = E\text{-closure}(T56, comp)) = E\text{-closure}(a^1_3) \\ = a^1_3, \eta^1_1, \eta^2_2, \eta^3_3, \eta^4_4$$

$$\rightarrow T57 = a^1_1$$

$$T64 = E\text{-closure}(T57, sem)) = E\text{-closure}(a^1_4) - \\ = a^1_4, a^1_1, \eta^1_1, \eta^2_2, \eta^3_3, \eta^4_4$$

$$\rightarrow T58 = a^1_1$$

~~$$T65 = E\text{-closure}(T58, assign)) = E\text{-closure}(a^1_2) = T19$$~~

$$\rightarrow T50 = 48$$

$$T60 = 53$$

$$T61 = 99$$

$$T65 = E\text{-closure}(S(T61, \text{rparen})) = E\text{-closure}(102) = 102$$

$$\rightarrow T62 = 10^3$$

$$T66 = E\text{-closure}(S(T62, \text{lbrace})) = E\text{-closure}(106)$$

$$= 106, 55, 57, 54, 85, 86, 87, 88, 89, 13, 10, 11$$

$$\rightarrow T63 = 83, \overset{1}{\eta_1}, \overset{2}{\eta_2}, \overset{3}{\eta_3}, \overset{4}{\eta_4}, \overset{5}{\eta_5}$$

$$T67 = E\text{-closure}(S(T63, \text{FACTOR})) = E\text{-closure}(84) = 84$$

num	$= T17$
id	$= T18$
that	$= T19$
lparen	$= T20$

$$\rightarrow T64 = 10^4, \overset{1}{81}, \overset{2}{\eta_1}, \overset{3}{\eta_2}, \overset{4}{\eta_3}, \overset{5}{\eta_4}, \overset{6}{\eta_5}$$

$$T68 = E\text{-closure}(S(T64, \text{COND})) = E\text{-closure}(107) = 107$$

$$T69 = E\text{-closure}(S(T64, \text{FACTOR})) = E\text{-closure}(82) = T56$$

num	$= T17$
id	$= T18$
that	$= T19$
lparen	$= T20$

$$\rightarrow T65 = 10^1 2$$

$$T69 = E\text{-closure}(S(T65, \text{block})) = E\text{-closure}(105)$$

= 105, 55, 57, 54

85, 86, 87, 88, 89, 19, 11, 13

$$\rightarrow T66 = 10^1 6, 55, 57, 54, 85, 86, 87, 88, 89, 19, 11, 13$$

$$T70 = E\text{-closure}(S(T66, \text{block})) = E\text{-closure}(109) = 109$$

$$T71 = E\text{-closure}(S(T66, \text{STMT})) = E\text{-closure}(56) = T35$$

VDECL	= T36
ASSIGN	= T37
if	= T38
while	= T39
for	= T40
VTYPE	= T41
id	= T58

$$\rightarrow T67 = 84$$

$$T68 = 109$$

$$T71 = E\text{-closure}(S(T68, \text{stmt})) = E\text{-closure}(110) = 110, 18$$

$$\rightarrow T_{\eta 1} = \{ \begin{matrix} 1 & 0 & 0 & 2 \\ 105, 55, 57, 54 \\ 85, 66, 87, 88, 89, 16, 11, 18 \end{matrix}$$

$$T_{\eta 2} = E\text{-closure}(SCT_{\eta 1}, \text{BLOCK})) = E\text{-closure}(103) = 108$$

↓	STMT	= T35
	VDEFCL	= T36
	ASSIGN	= T37
	if	= T38
	while	= T39
	for	= T40
	VTYPE	= T41
	id	= T58

$$\rightarrow T_{\eta 0} = 109$$

$$T_{\eta 3} = E\text{-closure}(SCL_{\eta 0}, \text{rbrace})) = E\text{-closure}(116) = 116$$

$$\rightarrow T_{\eta 1} = \{ \begin{matrix} 1 & 2 \\ 10, 18 \end{matrix}$$

$$T_{\eta 4} = E\text{-closure}(T_{\eta 1}, \text{ASSIGN})) = E\text{-closure}(111) = 111$$

$$T_{\eta 5} = E\text{-closure}(T_{\eta 1}, \text{id})) = E\text{-closure}(109) = T58$$

$$\rightarrow T_{\eta 2} = 108$$

$$T_{\eta 5} = E\text{-closure}(T_{\eta 2}, \text{rbrace})) = E\text{-closure}(117) \\ = 117 \ 119 \ 120 \ 121$$

$$\rightarrow T\eta 3 = 116, \\ T\eta 4 = 111$$

$$T\eta 6 = E\text{-closure}(\mathcal{S}(T\eta 4, \text{paren})) = E\text{-closure}(112) = 112$$

$$\rightarrow T\eta 5 = 117 \quad 119 \quad 120 \quad 121$$

$$T\eta 7 = E\text{-closure}(\mathcal{S}(T\eta 5, \text{ELSE})) = E\text{-closure}(118) = 118$$

$$T\eta 8 = E\text{-closure}(\mathcal{S}(T\eta 5, \text{else})) = E\text{-closure}(122) = 122$$

$$\rightarrow T\eta 6 = 112$$

$$T\eta 9 = E\text{-closure}(b(T\eta 6, \text{brace})) = E\text{-closure}(113) \\ = 113, 55, 57, 54 \\ 85, 86, 87, 88, 89, 10, 11, 18$$

$$\rightarrow T\eta 7 = 113 \\ T\eta 8 = 122$$

$$T\eta 0 = E\text{-closure}(\mathcal{S}(T\eta 8, \text{brace})) = E\text{-closure}(123) \\ = 123, 55, 57, 54 \\ 85, 86, 87, 88, 89, 10, 11, 18$$

see(a)

$$\rightarrow T79 = \text{113}, \quad \begin{matrix} 0 & 9 & 2 & 3 & 4 & 5 & 6 & 7 \\ 55, 57, 54, 85, 26, 87, 88, 84, 10, 11, 18 \end{matrix} \quad \begin{matrix} \text{Date.} \\ \text{B} \end{matrix} \quad \begin{matrix} 8 & 9 \\ \text{No.} \end{matrix}$$

$$T81 = E\text{-closure}(S(T79, \text{BLOCK})) = E\text{-closure}(114) = 114$$

S TMT	= T35
VDECL	= T36
ASSIGN	= T37
if	= T38
while	= T39
for	= T40
vtype	= T41
id	= T58

$$\rightarrow T80 = \text{123}, \quad \text{see(a)}$$

$$T82 = E\text{-closure}(S(T80, \text{BLOCK})) = E\text{-closure}(124) = 124$$

see(a)	= T35
	= T36
	= T37
	= T38
	= T39
	= T40
	= T41
	= T58

$$\rightarrow T81 = 114$$

$$T83 = E\text{-closure}(S(T81, \text{rbrace})) = E\text{-closure}(115) = 115$$

$$\rightarrow T82 = 124$$

$$T84 = E\text{-closure}(S(T82, \text{rbrace})) = E\text{-closure}(51) = 51$$