

Remove left recursions & factors

$\langle A \rangle \rightarrow ! \langle B \rangle ; \langle D \rangle @ \langle G \rangle \%$

$\langle B \rangle \rightarrow \langle V \rangle \langle C \rangle$

$\langle C \rangle \rightarrow \langle U \rangle \langle C \rangle$

$\langle C \rangle \rightarrow \langle V \rangle \langle C \rangle$

$\langle C \rangle \rightarrow \lambda$

$\langle D \rangle \rightarrow \langle F \rangle : \langle E \rangle ;$

$\langle E \rangle \rightarrow \langle B \rangle \langle W \rangle$

$\langle W \rangle \rightarrow , \langle E \rangle$

$\langle W \rangle \rightarrow \lambda$

$\langle F \rangle \rightarrow ^$

$\langle G \rangle \rightarrow \langle H \rangle \langle Z \rangle$

$\langle Z \rangle \rightarrow \langle G \rangle$

$\langle Z \rangle \rightarrow \lambda$

$\langle H \rangle \rightarrow \langle I \rangle$

$\langle H \rangle \rightarrow \langle J \rangle$

$\langle I \rangle \rightarrow \&(\langle B \rangle);$

$\langle J \rangle \rightarrow \langle B \rangle = \langle K \rangle;$

$\langle K \rangle \rightarrow \langle L \rangle \langle X \rangle$

$\langle X \rangle \rightarrow + \langle L \rangle \langle X \rangle$

$\langle X \rangle \rightarrow - \langle L \rangle \langle X \rangle$

$\langle X \rangle \rightarrow \lambda$

$\langle L \rangle \rightarrow \langle M \rangle \langle Y \rangle$

$\langle Y \rangle \rightarrow * \langle M \rangle \langle Y \rangle$

$\langle Y \rangle \rightarrow / \langle M \rangle \langle Y \rangle$

$\langle Y \rangle \rightarrow \lambda$

$\langle M \rangle \rightarrow \langle B \rangle$

$\langle M \rangle \rightarrow \langle N \rangle$

$\langle M \rangle \rightarrow (\langle K \rangle)$

$\langle N \rangle \rightarrow \langle O \rangle \langle U \rangle \langle T \rangle$

$\langle O \rangle \rightarrow +$

$\langle O \rangle \rightarrow -$

$\langle O \rangle \rightarrow \lambda$

$\langle T \rangle \rightarrow \langle U \rangle \langle T \rangle$

$\langle T \rangle \rightarrow \lambda$

$\langle U \rangle \rightarrow 0$

$\langle U \rangle \rightarrow 1$

$\langle U \rangle \rightarrow 2$

$\langle U \rangle \rightarrow 3$

$\langle U \rangle \rightarrow 4$

$\langle U \rangle \rightarrow 5$

$\langle U \rangle \rightarrow 6$

$\langle U \rangle \rightarrow 7$

$\langle U \rangle \rightarrow 8$

$\langle U \rangle \rightarrow 9$

$\langle V \rangle \rightarrow P$

$\langle V \rangle \rightarrow Q$

$\langle V \rangle \rightarrow R$

$\langle V \rangle \rightarrow S$

Legend

! = PROGRAM

@ = BEGIN

% = END.

^ = INTEGER

& = PRINT

$\langle A \rangle = \langle \text{prog} \rangle$

$\langle B \rangle = \langle \text{identifier} \rangle$

$\langle C \rangle = \langle \text{more-id-digit} \rangle$

$\langle D \rangle = \langle \text{dec-list} \rangle$

$\langle E \rangle = \langle \text{dec} \rangle$

$\langle F \rangle = \langle \text{type} \rangle$

$\langle G \rangle = \langle \text{stat-list} \rangle$

$\langle H \rangle = \langle \text{stat} \rangle$

$\langle I \rangle = \langle \text{print} \rangle$

$\langle J \rangle = \langle \text{assign} \rangle$

$\langle K \rangle = \langle \text{expr} \rangle$

$\langle L \rangle = \langle \text{term} \rangle$

$\langle M \rangle = \langle \text{factor} \rangle$

$\langle N \rangle = \langle \text{number} \rangle$

$\langle O \rangle = \langle \text{sign} \rangle$

$\langle T \rangle = \langle \text{more-digit} \rangle$

$\langle U \rangle = \langle \text{digit} \rangle$

$\langle V \rangle = \langle \text{id} \rangle$

$\langle W \rangle = \langle \text{Factor for dec} \rangle$

$\langle X \rangle = \langle \text{Remove Recursion for expr} \rangle$

$\langle Y \rangle = \langle \text{Remove Recursion for term} \rangle$

$\langle Z \rangle = \langle \text{Factor for stat-list} \rangle$