Grammar

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program ::= definition | identifier | definition program
definition ::= "let" identifier "=" term
term ::= application | abstraction
application ::= atom | application atom
atom ::= identifier | parenthesized-term
abstraction ::= "\" parameters "." term
parameters ::= identifier | identifier parameters
identifier ::= letter | identifier letter-or-digit
letter ::= "a" | "b" | ... | "z" | "A" | "B" | ... | "Z"
letter-or-digit ::= letter | digit
digit ::= "0" | "1" | ... | "9"
parenthesized-term ::= "(" term ")"

Example:
let I = \x.x
I

program → definition program
| definition → "let" identifier "=" term
| | "let" identifier "=" term → identifier
| | | identifier → "I"
| | "let" identifier "=" term → term
| | | term → abstraction
| | | | abstraction → "\" parameters "." term
| | | | | "\" parameters "." term → parameters
| | | | | | parameters → identifier
| | | | | | | identifier → "x"
| | | | | "\" parameters "." term → term
| | | | | | term → application
| | | | | | | application → atom
| | | | | | | | atom → identifier
| | | | | | | | | identifier → "x"
| program → identifier
| | identifier → "I"
| | | "I" → term → \x.x