A program is a sequence of expressions and statements.

- **Expression Forms**
  - **Literal Value**
    - expression that are in the following forms, until that produces the literal value of the — the expression after the header is the "body" expression — the parenthesized function name with parameter names is the "header" — the expression after the header is the "body" expression

- **Variable Reference**
  - variable-name : variable, from a definition

- **Function Call**
  - (function-name expression etc)
    — the expressions after the function name are the "argument" expressions

- **Definition of Variable**
  - (define variable-name expression)
    — the expression after the variable name is the "value" expression

- **Definition of Function**
  - (define (function-name parameter-name etc) expression)
    — the parenthesized function name with parameter names is the "header"
    — the expression after the header is the "body" expression

- **Reveal Algebraic Evaluation Sequence**
  - (step expression)
    - Show the sequence of expressions produced by replacing sub-expressions that are in the following forms, until that produces the literal value of the expression or stops and reports an error.

\[ ... \text{ (function-name literal-value etc) ...} \]

- For a function from our language: substitute a directly computed value, or report an error if there are the wrong number or kind of arguments needed by the function.
- For a function from a definition: copy its body and substitute the arguments in place of the parameter names wherever those names occur in the body, or report an error if the number of arguments and parameter names differ.

\[ ... \text{ variable-name ...} \]

  + literal-value
  - Substitute the value that was computed when the variable was defined.

- **Function Examples**
  - **Type Predicates**
    - (image? \(\rightarrow\) #true
    - (function? \(\rightarrow\) #true
    - (number? \(-12.3\) #true
    - (boolean? #false #true

  - **Function Predicates**
    - (unary? \(\rightarrow\) #true
    - (binary? \(\rightarrow\) #false

  - **Image Functions**
    - (mirror \(\rightarrow\) \(\rightarrow\) \(\rightarrow\)
      (flip \(\rightarrow\)
      (clockwise \(\rightarrow\) \(\rightarrow\) \(\rightarrow\)
      (anti-clockwise \(\rightarrow\) \(\rightarrow\) \(\rightarrow\)

    - (scale \(1.5\) \(\rightarrow\)
      (small \(\rightarrow\)
      (large \(\rightarrow\)

    - (scale-width \(1.5\) \(\rightarrow\)
      (thin \(\rightarrow\)
      (wide \(\rightarrow\)

    - (scale-height \(1.5\) \(\rightarrow\)
      (tall \(\rightarrow\)
      (short \(\rightarrow\)

    - (triangle \(9\) \(\rightarrow\)
      (circle \(9\) \(\rightarrow\)
      (square \(9\) \(\rightarrow\)

    - (oval \(9\) \(15\) \(\rightarrow\)
      (rectangle \(9\) \(15\) \(\rightarrow\)

    - (width (oval \(9\) \(15\)) \(9\)
      (height (oval \(9\) \(15\)) \(15\)

    - (above-left \(\rightarrow\)
      (above \(\rightarrow\)
      (above-right \(\rightarrow\)

    - (above-left \(\rightarrow\)
      (above \(\rightarrow\)
      (above-right \(\rightarrow\)

- **Numeric Functions**
  - (\(+\) \(2\) \(10\) \(3\) \(15\)
  - (\(*\) \(2\) \(10\) \(3\) \(60\)
  - (\(-\) \(12\) \(12\) \(12\) \(\rightarrow\)
  - (\(/\) \(12\) \(3\) \(4\)
  - (\(-\) \(12\) \(3\) \(9\)
  - (\(+\) \(2\) \(10\) \(3\) \(60\)
  - (\(*\) \(2\) \(10\) \(3\) \(15\)
  - (\(/\) \(12\) \(3\) \(4\)
  - (\(-\) \(12\) \(3\) \(9\)