Question 1

1.1

1.2

a.

Each special form might be evaluated differently, which allows behavior that wouldn’t be possible otherwise. Let’s say we need to evaluate the expression

(**if** (**eq?** x 0) 0 x/2)

This is possible because the special form ‘if’ evaluates the ‘else’ statement only when x is **not** 0. Without special forms this expression would result in error (division by 0)

b.

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1.3

syntactic abbreviation, or syntactic sugar is a more comfortable, readable way to write some code. Every block of code which uses syntactic abbreviation can be written without it using primitives, but it would result in less readable code. In L3 we have ‘let’ which could be expressed as lambda and ‘and’ which could be easily written as two if statements but will result in duplicate code.

1.4

(**define** x 1) ;;

(**let** ((**x** 5)

(**y** (**\*** x 3))) y)