

# Hello, Haskell!

Redexes are reducible expressions. (Also called "*normalizing*" or "executing" an expression)  
Functions are a specific type of expression. Currying is applying a series of nested functions.

## 1 Evaluation

Evaluating an expression is reducing the terms until the expression reaches its simplest form.

## 2 Associativity and precedence

Higher number, higher precedence. Associativity: left or right.

Use space, not tab.

Error: indent, not starting a declaration at the beginning (left) column of the line.

The first declaration in a module defines the remaining ones.

`(quot x y) * y + (rem x y) == x (div x y) * y + (mod x y) == x`

mod has the same sign as the divisor. rem: dividend

sectioning (+1)

## 3 Let and where

Let introduces an expression, where is a declaration.

Scope is the area of source code where a binding of a variable applies.

Write code in a source file: the order is unimportant, but when writing code directly into the REPL, it does matter.

Infix: place between.

### Definition

**Syntactic sugar** is syntax within a programming language designed to make expressions easier to write or read.

Types are way of categorizing values.

`::` has the type (type signature)

### Definition : Typeclasses

Typeclasses provide definitions of operations, or functions, that can be shared across sets of types.

`(:)` cons

### Definition : Scope

Scope is where a variable referred to by name is valid. Another word used with the same meaning is *visibility*, because if a variable isn't visible, it's not in scope

### Definition : Local and Top level bindings

- Local bindings are bindings local to particular expressions. Cannot be imported by other programs or modules.
- Top level bindings are bindings that stand outside of any other declaration. Can be made available to other modules within your programs or to other ppl.

**Definition : Data Structures**

Data structures are way of organizing data so that the data can be accessed conveniently or efficiently.