# Version 1 – basic questions

1. Complete the following set of rules in order to compute the sum of all even elements of a list.

**Note:** A list is defined as:

* 1. nil, which is the empty list
  2. x;xs, which is an element x followed by the rest of the list xs

An example list with only four values could be written as 0;1;2;3;nil.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

addEven nil => 0

x % 2 == 0

…

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

addEven x;xs => …

x % 2 != 0

…

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

addEven x;xs => …

1. Complete the following set of rules in order to remove all zero-valued elements of a list.  
     
   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

removeZeros … => nil

…

…

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

removeZeros … => …

…

…

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

removeZeros … => …

1. Complete the following set of rules in order to support evaluation of arithmetic expressions (sum and product only).

**Note:** An arithmetic expression is defined as:

* 1. value i, which is an integer constant i
  2. (a b), which is an expression a plus another expression b
  3. (a b), which is an expression a times another expression b

An example of a simple expression could be written as:  
(value 10)((value 5) (value 2))

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eval (value i) => i

…

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

eval (a b) => …

…

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

eval (a b) => …