Exercises

Here are some exercises you might try to learn how to transform expressions into Eindhoven Quantified form. This is a key skill that I need you to learn so please practice.

Given an array f[0..100) of int. Express the following in Quantified form

- R is the sum of the values in f
- P is the product of the values in f
- L is the largest value in f
- S is the smallest value in f
- K is the sum of the last 20 elements in f
- V is the product of the middle 20 elements in f
- All of the elements in f are greater than 10
- All of the elements in f are even numbers
- None of the elements in f is larger than 123

Given the same array, what do the following expressions mean?

$\langle \forall j, k : 0 \le j \le k < 100 : f.j \le f.k \rangle$

$r = \langle + i : 0 \le i < 50 : f.i \rangle$

$r = \langle + i : 12 \le i < 53 : i \rangle$

$r = \langle + i : 40 \le i < 50 : i*i \rangle$

$r = \langle * i : 10 \le i < 40 : f.i \rangle$

$s = \langle \downarrow i : 50 \le i < 100 : f.i \rangle$

$\langle \exists i : 0 \le j < 50 : f.i < 0 \rangle$