Some useful commands in CoCoa

Your best friend using this program will be the online help. To get started type "?" or "`H.Man('');`." "`H.Commands('');`" will list all commands. All commands should be followed by a semi-colon `;`. Use ":= " to assign a value to a variable, "= " is used to test if two expressions are equal. All variable names should begin with an upper case letter, lowercase letters are reserved for indeterminates in the algebra.

Examples of commands that make a list

```
[1,2,3,4,5];
L:=1..5;
[ x^N | N In 1..5 ]; yields [x, x^2, x^3, x^4, x^5]
[X | X In L And IsPrime(X)]; yields [2, 3, 5]
[X In L | Not IsPrime(X)]; yields [1, 4]
[X In 1..20 | Mod(X,6)=0]; yields [6, 12, 18]
NewList(4); yields [Null, Null, Null, Null]
NewList(4,0); yields [0, 0, 0, 0]
```

A user defined function usually has the following format

```
Define MyFunction( Arguments )
<Commands>
EndDefine;
```

Example:

```
Define ReprPoly(F);
Return [Reversed(Coefficients(P, x)) | P In Reversed(Coefficients(F,y))];
EndDefine;
ReprPoly((x-y)^3);
```

There is a special variable called `It` which refers to the output of the last command. Example:

```
(x-y)^3;
x^3 - 3x^2y + 3xy^2 - y^3
Latex(It);
```

Use the online help to find the command to do the following tasks:
Reverse a list _____
Find the degree of a polynomial _____ in a variable 'x' _____
Access the i^{th} element of a list _____
Add one more element on the end of a list _____
Find the coefficient of x^2y in a polynomial _____
Add the numbers 1 through 100 _____
Multiply the odd numbers numbers between 1 and 100 _____
Change the ring so that calculations are done in $\mathbb{Z}/(5)[x, y, z]$ _____
Find the length of a list _____