Indexing expressions in Grapher 2.1

Coefficients are functions of the index.

example for two coefficients :

a(i) = 0,5i - 2
b(i) = -3i + 1
f(i) = a(i)x + b(i)
y = f(0) that is y = -2x + 1
y = f(1) « « y = -1,5x - 2
y = f(2) « « y = -x - 5
etc.

Each coefficient is function of his own index.

example for three coefficients :

a(i) = 0,5i - 2
b(j) = -3j + 1
c(k) = k
f(i, j, k) = a(i)x + b(j) + c(k)
y = f(0, 0, 0) that is y = -2x + 1
y = f(1, 0, 1) « « y = -1,5x + 2
y = f(2, 1, 2) « « y = -x
etc.

Coefficient are not functions (maximum : 3).

we already tried Grapher matrices for three or less coefficients. Example :

$$A=\left\{\begin{bmatrix}-1\\1\end{bmatrix},\begin{bmatrix}2\\3\end{bmatrix},\begin{bmatrix}4\\2\end{bmatrix}\right\}$$

3 pairs of coefficients in 3 matrices 2x1

$$y=A^{T}.\begin{bmatrix}x\\1\end{bmatrix}$$

3 equations y = ax + b

Coefficient are not functions (more than 3).

using your second solution may be easier that way (copy - paste is useful !)

$a_1 = -1$
$a_2 = 2$
$a_3 = 4$
$b_1 = 1$
$b_2 = 3$
$b_3 = 2$
$y = a_1x + b_1$
$y = a_2x + b_2$
$y = a_3x + b_3$

many lines but less signs and very easy to type.

But don't you think it's better to write straight the 3 or more equations y = -1x +1 etc. ?

Grapher and indices.

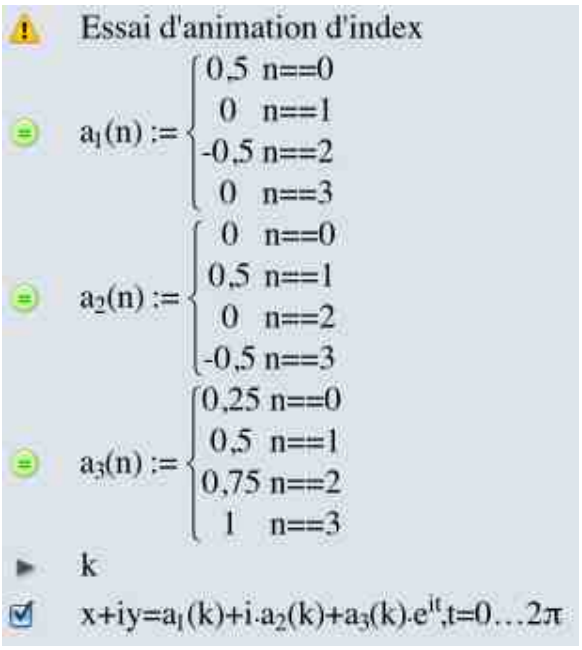
Grapher shows indices in three places :

- coefficients of regression polynomial equations a_1 to a_N but we cannot use their names in other expressions ;
- in series equations there is one index for the two or three coordinates ; in a 2D window, a serie plots only points, not curves ;
- when using the signs : $\sum_{\square}^{\square}$ $\prod_{\square}^{\square}$

Unfortunately we can't use the point sets data, they don't have indices, and matrices are 3x3 maximum.

Animation of an index.

I think there is one way only for that : your idea, using conditions, congratulations ! Example, animating circles, four step with four centers and four radiuses :



Many coefficients and many index values need time for writing equations, but it works.

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