

I can define a vector function of x

$$g(x) := \begin{bmatrix} x^2 \\ \sin(x) \end{bmatrix}$$

$$g(0.5) \xrightarrow{\text{float}, 3} \begin{bmatrix} 0.25 \\ 0.479 \end{bmatrix}$$

and get the $g(x)[0]$ or $g(x)[1]$

$$g(x)_0 \rightarrow x^2$$

$$g(x)_1 \rightarrow \sin(x)$$

$$\sum_{j=0}^1 g(x)_j \rightarrow \sin(x) + x^2$$

I can define a function $g(x)$ inside of a program and use it

$$A1(a) := \begin{bmatrix} g(x) \leftarrow \cos(x) + \sin(x) \\ g(a) \end{bmatrix}$$

$$A1(0.5) \xrightarrow{\text{float}, 3} 1.36$$

But, I can't define a vector function of x inside a program and use it

$$A2(a) := \begin{bmatrix} g(x)_0 \leftarrow x^2 \\ g(x)_1 \leftarrow \sin(x) \\ g(a) \end{bmatrix}$$

$$A3(a) := \begin{bmatrix} b_0 \leftarrow x^2 \\ b_1 \leftarrow \sin(x) \\ g(x) \leftarrow b \\ g(a) \end{bmatrix}$$

$$A2(0.5) \rightarrow ?$$

$$A3(0.5) \rightarrow \begin{bmatrix} x^2 \\ \sin(x) \end{bmatrix}$$

Some idea?