**polyder**

*Function of calculating derivative of polynomial.*

**Syntax:**

*С* = **polyder**(*A*);

**Arguments:**

*A* – input array comprising coefficients a0, a1, …an of polynomial of:

f(t) = a0+a1t+a2t2+…+antn type.

**Description:**

*polyder(A)* – function returns array of coefficients of polynomial obtained as a result of calculating derivative of polynomial specified by an array of coefficients *А*.

Input array *A* can be assigned:

* as variable of array type determined earlier:

*С* = **polyder**(*A*);

* as an array consisting of variables determined earlier:

*С* = **polyder**([*a1,a2,a3,a4*]);

* as constant array:

*С* = **polyder**([-1, -6, -4, -2]);

**Result:**

*С* – output array comprising coefficients c0, c1, …cn-1 of polynomial obtained as a result of calculating derivative of polynomial specified by an array of coefficients *А*:

q(t) = f’(t) = c0+c1t+c2t2+…+cn-1tn-1

**Example:**

|  |  |
| --- | --- |
|  | **const** A = [1, 0, -2, -5];  C = **polyder**(A); |

As a result, elements of array *C* will be assigned values [0, -4, -15] being the coefficients of polynomial q(t) = 0 - 4t - 15t2 obtained as a result of calculating derivative of polynomial   
f(t) = 1 - 2t2 - 5t3. Polynomial f(t) is determined by array *A*.