**inv**

*Function of calculating reciprocal matrix.*

**Syntax:**

*C* = **inv**(*M*);

**Arguments:**

*M* – input matrix.

**Description:**

*inv(M)* – function returns matrix, which is inverse to matrix *M*. Matrix *M* shall be square. In case of multiplying reciprocal matrix by the original matrix an identity matrix is produced (all diagonal elements of this matrix equal 1). In order to calculate the identity matrix, it is possible to use the operation of dividing matrices.

Input matrix *М* can be assigned:

* as variable of matrix type determined earlier:

*C* = **inv**(*M*);

* as matrix consisting of variables determined earlier:

*C* = **inv**([[*x1,x2*],[*x3,x4*]]);

* as constant matrix:

*C* = **inv**([[1,2],[3,4]]);

**Result:**

*С* – output matrix, which is inverse to matrix *M*.

**Example:**

|  |  |
| --- | --- |
|  | //arrays of matrix elements  **const** M = [[2, 5, 7], [6, 3, 4], [5, -2, -3]];  C = **inv**(M); |

As a result, elements of matrix *C* will be assigned values [[1, -1, 1], [-38, 41, -34], [27, -29, 24]] determining matrix *C,* which is inverse to matrix *M*.