Matrix Multiplication

Created by MathWorks for Structural Dynamics

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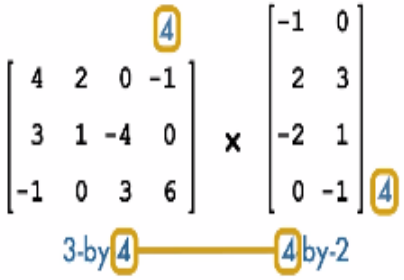

If we think of matrices in the traditional sense of linear algebra one common operation involves multiplying two matrices together recall that in mathematics to multiply two arrays such as a matrix and a vector the number of columns of the left array must equal the number of rows of the right array.

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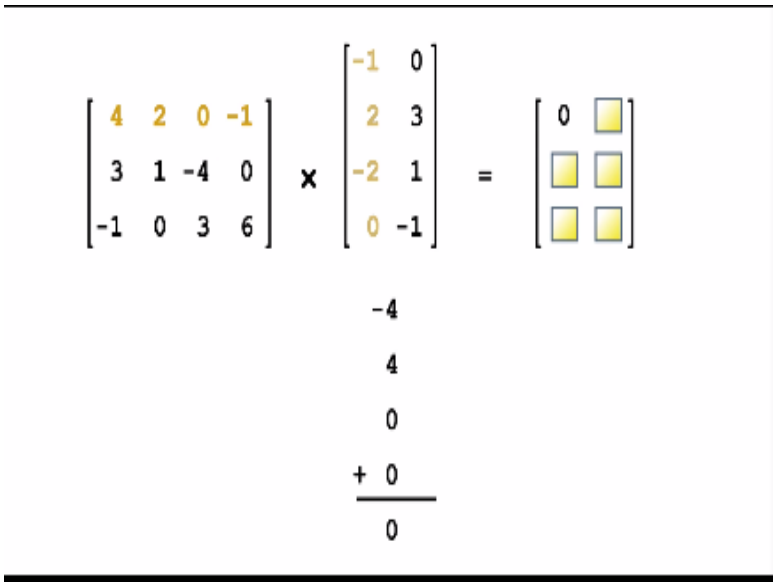

Then for the multiplication each element of the first row of the array on the left is multiplied by the corresponding element of the first column of the array on the right. The resulting products are then summed together to produce one element of the final array.

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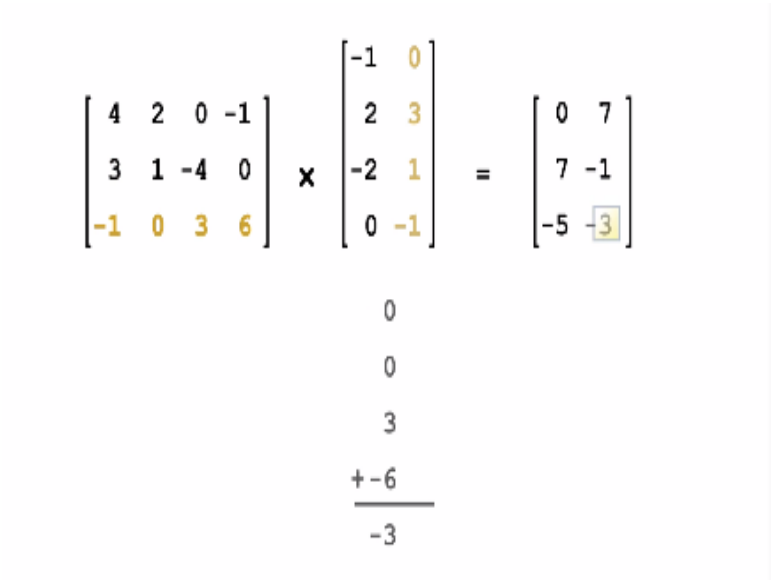

This is then repeated but all rows of the first array and all columns of the second array.

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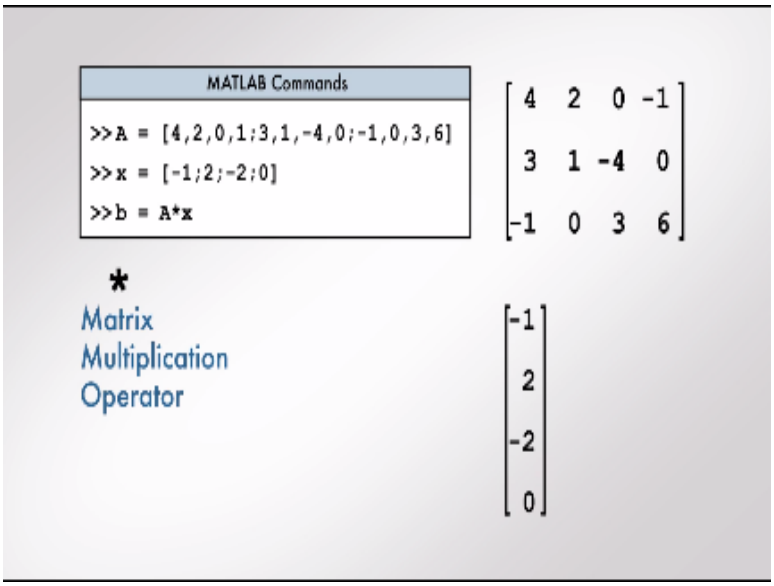

In MATLAB the multiplication operator represented by the asterisk or star acts according to the mathematical definition of matrix multiplication. So if we have a matrix and a column vector with appropriate sizes then the product of the matrix A and the vector X can be computed using this command.

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