Matrixmultiplikation

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Matrixmultiplikation mit Zeilen oder mit Spalten

Am Beispiel

```python
[6]: # imports
import sympy as sp
sp.init_printing()
from sympy import *
from sympy.matrices import Matrix, eye, zeros, ones, diag, GramSchmidt

i1 = symbols("i1")
i2 = symbols("i2")
i3 = symbols("i3")
i4 = symbols("i4")
A = Matrix([[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12], [13, 14, 15, 16]])
A
```

$$[6]: \begin{bmatrix} 1 & 2 & 3 & 4 \\ 5 & 6 & 7 & 8 \\ 9 & 10 & 11 & 12 \\ 13 & 14 & 15 & 16 \end{bmatrix}$$

Matrix mal Einheits-Spaltenvektor = Spaltenvektor

```python
[7]: i = Matrix(4, 1, [0, 1, 0, 0])
A*i
```

$$[7]: \begin{bmatrix} 2 \\ 6 \\ 10 \\ 14 \end{bmatrix}$$

Einheits-Zeilenvektor mal Matrix = Zeilenvektor

```python
[8]: i.T*A
```

$$[8]: \begin{bmatrix} 5 & 6 & 7 & 8 \end{bmatrix}$$

```python
[ ]:
```