

```

[ > restart:
[ > with(linalg):
Warning, the protected names norm and trace have been redefined and
unprotected
[ > A:=matrix([[1,-2],[1,-1],[1,0],[1,2]]): B:=transpose(A):
[ X:=matrix([[a],[b]]): Y:=matrix([[4],[3],[1],[0]]):
[ > evalm(A)*evalm(X)=evalm(Y);
[
[

$$\begin{bmatrix} 1 & -2 \\ 1 & -1 \\ 1 & 0 \\ 1 & 2 \end{bmatrix} \begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} 4 \\ 3 \\ 1 \\ 0 \end{bmatrix}$$

[
[ > evalm(B) * evalm(A) * evalm(X) = evalm(B) * evalm(Y);
[
[

$$\begin{bmatrix} 1 & 1 & 1 & 1 \\ -2 & -1 & 0 & 2 \end{bmatrix} \begin{bmatrix} 1 & -2 \\ 1 & -1 \\ 1 & 0 \\ 1 & 2 \end{bmatrix} \begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} 1 & 1 & 1 & 1 \\ -2 & -1 & 0 & 2 \end{bmatrix} \begin{bmatrix} 4 \\ 3 \\ 1 \\ 0 \end{bmatrix}$$

[
[ > evalm(B&A)*evalm(X) = evalm(B&Y);
[
[

$$\begin{bmatrix} 4 & -1 \\ -1 & 9 \end{bmatrix} \begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} 8 \\ -11 \end{bmatrix}$$

[
[ > 4*a - b = 8; -a + 9*b = -11;
[
[

$$4a - b = 8$$


$$-a + 9b = -11$$

[
[ > solve({4*a - b = 8, -a + 9*b = -11}, {a,b});
[
[

$$\left\{ a = \frac{61}{35}, b = \frac{-36}{35} \right\}$$

[
[ > y = (61/35) + (-36/35)*x;
[
[

$$y = \frac{61}{35} - \frac{36}{35}x$$

[ >

```