

# nullspaces

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It's said that the nullspace basis can be written as the pivot variables be in terms of the free variables, when reducing them.

However, I have a problem. What happens when you have something like:

$$\begin{aligned}x_1 &= 0 \\x_2 &= 0 \\x_3 &= 0 \\x_4 &= 0\end{aligned}$$

in a 4x4 matrix.

Also, what about

$$\begin{aligned}x_1 &= 0 \\x_2 &= 0 \\x_3 &= 0 \\0 &= 0 \text{ (for } x_4\text{)}\end{aligned}$$

Another one,

$$\begin{aligned}x_1 &= 0 \\x_2 &= 0 \\x_3 &= x_4 \\0 &= 0\end{aligned}$$

As well as,

$$\begin{aligned}0 &= 0 \\0 &= 0 \\0 &= 0 \\0 &= 0\end{aligned}$$

Any advice would be helpful.

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