Math 220 Assignment

October 24, 2001

Due Friday, October 26

If M is an $m \times n$ matrix, the phrase "corresponding linear function" will denote the linear function from $\mathbf{R}^n$ to $\mathbf{R}^m$ that sends x to Mx.

In the case $m = 2,\ n = 3$ with

$$M = \begin{pmatrix} 3 & 6 & 0 \\ 2 & 4 & 1 \end{pmatrix}$$

compute each of the following items both for (i) M itself and for (ii) its reduced row echelon form:

1. The set of linear combinations of the columns.
2. The set of linear combinations of the rows.
3. The set of linear relations among the columns.
4. The set of linear relations among the rows.
5. The kernel of the corresponding linear function.
6. The image of the corresponding linear function.

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`http://math.albany.edu:8000/math/pers/hammond/course/mat220/assgt/la011024.html`