Matrix Algebra Using MINImal MATlab

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Errata

Exercise 57B. "Then" should be "Prove that".

Exercise 78C. The answer on page 475 has should read:

$$E_2E_3 = \begin{bmatrix} 0 & 0 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix}, \qquad (E_2E_3)^{-1} = E_3E_2 = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{bmatrix}.$$

Page 79 "`#> A = [1 2; 3 4; 5 6]`" should be "`#> A = [1 2; 3 4; 4 5]`"

Page 91. The listing of `gj.m` contains a bug. The sixth line should be

```
if r==m, free=[free, k:n]; return; end
```

not

```
if r==m, free=[free, r+1:n]; return; end
```

This error may also appear in the disk file `gj.m`. If so, fix it. Otherwise, some other `.M` files which depend on `gj.m` will function incorrectly.

Example 102A. Should read

$$H = \begin{bmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \end{bmatrix}, \quad T = \begin{bmatrix} 0 & 0 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix}, \quad H = \begin{bmatrix} b_1 & c_1 & a_1 \\ b_2 & c_2 & a_2 \end{bmatrix}.$$

Exercise 103D. Answer on page 479: "$Y = \begin{bmatrix} -b \\ a \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix}$" should be "$Y = \begin{bmatrix} -d \\ e \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix}$"

Proof of Lemma 106C "$R = PD^{-1}$" should be "$R = DP^{-1}$".

Exercise 122C the product MY_3 in the answer on page 482 is wrong. The easiest fix is to change the problem so $Y_3 = \begin{bmatrix} 8 \\ 0 \\ 0 \end{bmatrix}$. Also "the is no" on page 482 should be "there is no".

Exercise 122D. Refers to Example 120A not 121B.

Exercise 122E. Answer on page 482 should read: $Y_1 = \begin{bmatrix} 1 \\ 1 \end{bmatrix}$, $Y_2 = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$, no.

Exercise 129G "$\mathcal{R}(B) \subset \mathcal{N}(B)$" should be "$\mathcal{R}(B) \subset \mathcal{R}(A)$."

Exercise 131A (3) should be "`#> A=rand(3,5), B=rand(2,3)*A`

Theorem 132C. "for $j = 1, 2, \ldots, m$ in the statement of the theorem and in the first line of the proof should be "for $j = 1, 2, \ldots, n$. Also "$A_j \in \mathcal{V}$" in the proof should be "$A_j \in \mathcal{W}$."

Corollary 144A. Last Line should read

$$\mathcal{N}(\Phi) = \mathcal{N}(P\Phi) = \mathcal{N}(\Phi) = \{0\}.$$

Example 147B "$c_{11} = c_{12} = c_{22} = 0$" should be "$c_{11} = c_{21} = c_{22} = 0$".

Exercise 148B Answer (4) on page 487 should be (4) $\begin{bmatrix} 4 & -3 & -2 \\ -5 & 5 & 2 \\ -2 & 2 & 1 \end{bmatrix}$.

Exercise 148B answer on page 487: The first two columns of (7) form a basis for its range.

Exercise 148E "$Y = \Psi X$" should be "$Y = AX$".

Page 180. Bottom line should read

$$Q_1 = \begin{bmatrix} A\Psi & \Psi_1 \end{bmatrix}, \qquad Q_2 = \begin{bmatrix} B\Psi & \Psi_2 \end{bmatrix}.$$

Exercise 184F. Replace "commute" by "are equal".

Exercise 173B answer on page 489 "$\mathcal{N}(A) = \{0\}$" should be"$\mathcal{N}(\Phi) = \{0\}$".

Exercise 165A answer. Replace `Y` by `X`.

176G Answer "$\mathbf{F}^{m\times 1} \subset \mathcal{N}(A)$" should be "$\mathbf{F}^{m\times 1} \subset \mathcal{R}(A)$"

177B Answer In both parts (1) and (2) the sentence which begins "If A has a " is not needed.

Page 207 "$z_{kj} = \langle V_k, U_j \rangle$" should be "$z_{jk} = \langle V_k, U_j \rangle$".

Exercise 260A. In the answer on page 500 `solve` should be `randsoln`.

The answer to Exercise 264B on page 501 contains an obvious reversal error.