

Exercise Solutions (Continued)

Chapter 7

1. (a) **rSwap(A, 2, 1)**; **mRAdd(-2, Ans, 1, 2)**; **mRAdd(2, Ans, 1, 3)**; **mRAdd(-1, Ans, 2, 3)**;
multR(.2, Ans, 3); **mRAdd(-1, Ans, 3, 1)**; **mRAdd(3, Ans, 3, 2)**.

(b)
$$\begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & 0 \end{bmatrix}$$

- (c) Take $\mathbf{S} = \mathbf{A}(2, 1, 3, 2)$.

(d)
$$\begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & -3 & -1 \end{bmatrix}.$$

2. **det(4B) = 128** and **64det(B) = 128**.
3. A close examination of **eigVc B** leads to the conjecture that $[-2 \ 3 \ 1]$ is an eigenvector for **B**. Computing the quantity **B*[-2 3 1]** confirms that $[-2 \ 3 \ 1]$ is an eigenvector for **B** belonging to 2.
4. After creating the matrix **S**, start with $[1 \ 2]$ on the home screen and execute **S *Ans:Ans/max(vc ►li Ans)** about ten times by repeated pressing of the **ENTER** key.
5. Create a 4×4 matrix **T** and enter the given matrix as the first three columns of **T**. Then on the home screen do **rref T:Ans(1, 1, 4, 3)**.
6. Compute **W*(.5W² - 2W + (5/2)ident3)** and get the 3×3 identity matrix. Note that **ident** can be found in the OPS submenu of the MATRX menu.