Section 1.4, exercise 5b) Use the matrix

$$B = \begin{bmatrix} 2 & -3 \\ 4 & 4 \end{bmatrix}$$

to verify that

$$(B^T)^{-1} = (B^{-1})^T \quad .$$

Section 1.4, exercise 8 Let A be the matrix

$$\begin{bmatrix} 2 & 0 \\ 4 & 1 \end{bmatrix} \quad .$$

Compute A^3, A^{-3}, and $A^2 - 2A + I$.

Section 1.4, exercise 17 Let A and B be square matrices such that $AB = 0$. Show that if A is invertible, then $B = 0$.

Section 1.5, exercise 7ab) Use the method shown in Examples 4 and 5 (samme metode som vist på forelesning onsdag) to find the inverse of the given matrix if the matrix is invertible, and check your answer by multiplication.

$$\text{a)} \quad \begin{bmatrix} 3 & 4 & -1 \\ 1 & 0 & 3 \\ 2 & 5 & -4 \end{bmatrix} \qquad \text{b)} \quad \begin{bmatrix} -1 & 3 & -4 \\ 2 & 4 & 1 \\ -4 & 2 & -9 \end{bmatrix} \quad .$$

Section 1.5, exercise 12 Write the matrix

$$\begin{bmatrix} 3 & -2 \\ 3 & -1 \end{bmatrix}$$

as a product of elementary matrices.
Note: There is more than one correct solution.