• Section 5.1: 6, 28.
• Section 5.2: 2 and 16; 14 and 28; as well as 32 and 34.
• (a) Determine the QR decomposition of the following $n \times 2$ matrix:

$$A = \begin{bmatrix}
1 & a_1 \\
1 & a_2 \\
\vdots & \vdots \\
1 & a_n
\end{bmatrix}$$

where $a_1, \ldots, a_n$ are numbers (not all equal).

(b) Compute $(A^T A)^{-1} A^T = R^{-1} Q^T$. (Check your answer against Example 5 on pp. 243-4.)