

1. From the textbook: 7, 8, 9, 13 in 16.1; 1, 2, 4 in 17.1; 1, 7, 8, 9 in 17.2

2. Let  $f(x) = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix} + \begin{pmatrix} 0 & 1 & 3 \\ 2 & 1 & 2 \\ -1 & 1 & 1 \end{pmatrix} x$ . Compute the inverse function.

3. Let  $f(x) = x^3 - 2x + 1$ . Apply Newton's method to find the 3 real roots of the polynomial to 12 decimal digits precision. Write down the first two iterations in detail and the result.