

EX.2.3.5, Sauer3

Find the relative forward and backward errors and error magnification factor for the following approximate solutions of the system

$$\begin{cases} x_1 - 2x_2 = 3 \\ 3x_1 - 4x_2 = 7 \end{cases}$$

$$(a) \begin{pmatrix} -2 \\ -4 \end{pmatrix} \quad (b) \begin{pmatrix} -2 \\ -3 \end{pmatrix} \quad (c) \begin{pmatrix} 0 \\ -2 \end{pmatrix} \quad (d) \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$

(e) What is the condition number of the coefficient matrix?