

$$\begin{aligned}
4x_1 + 3x_2 + 3x_3 - 2x_4 &= \lambda \\
-x_1 - x_2 - x_3 + x_4 &= 2 \\
-19x_1 - 19x_2 - 20x_3 + (11 + \mu)x_4 &= 6 - 2\lambda \\
4x_1 + 7x_2 + 8x_3 + x_4 &= -2
\end{aligned}$$

$$\sim \begin{pmatrix} 4 & 3 & 3 & -2 & \lambda \\ -1 & -1 & -1 & 1 & 2 \\ -19 & -19 & -20 & (11 + \mu) & 6 - 2\lambda \\ 4 & 7 & 8 & 1 & -2 \end{pmatrix}$$