

$$PA = LU \Rightarrow PAx = LUx = Py$$

$$1. Ly = Pb$$

$$y_1 = \underline{1}$$

$$\frac{1}{5}y_1 + y_2 = 0 \Rightarrow y_2 = \underline{-\frac{1}{5}}$$

$$-\frac{1}{5}y_1 + \frac{1}{4}y_2 + y_3 = 0 \Rightarrow -\frac{1}{5} - \frac{1}{4} \cdot \frac{1}{5} + y_3 = 0$$

$$\Rightarrow -\frac{1}{5} \left(\frac{5}{4} \right) + y_3 = 0 \Rightarrow y_3 = \underline{\frac{1}{4}}$$

$$y = \begin{pmatrix} 1 \\ -\frac{1}{5} \\ \frac{1}{4} \end{pmatrix} \quad \left(\frac{1}{2} \right)$$

$$2. Ux = y$$

$$2,5x_3 = \frac{1}{4} \Rightarrow 10x_3 = 1 \Rightarrow x_3 = \underline{0,1}$$

$$-3,2x_2 + 1,2x_3 = -\frac{1}{5}$$

$$\Rightarrow -3,2x_2 + 1,2 = -2 \Rightarrow -3,2x_2 = -3,2 \Rightarrow x_2 = \underline{0,1}$$

$$5x_1 + 0,1 - 0,1 = 1 \Rightarrow x_1 = \frac{1}{5} = \underline{0,2}$$

$$x = \begin{pmatrix} 0,2 \\ 0,1 \\ 0,1 \end{pmatrix} \quad \left(\frac{1}{2} \right)$$