① Standard basis ordering:

The basis

$$B = \{E_{11}, E_{12}, E_{21}, E_{22}, E_{31}, E_{32}\},$$

where each E_{ij} is the 3×2 matrix with a 1 in entry (i,j) and 0's elsewhere

② Match matrix entries to basis vectors:

For

$$M = \begin{pmatrix} 2 & 5 \\ 1 & -7 \\ -3 & 4 \end{pmatrix}$$

we have

$$M = 2E_{11} + 5E_{12} + 1E_{21} + (-7)E_{22} + (-3)E_{31} + 4E_{32}$$

③ Form coordinate vector:

$$[M]_B = \begin{pmatrix} m_1 \\ m_2 \\ m_3 \\ m_4 \\ m_5 \\ m_6 \end{pmatrix} = \begin{pmatrix} 2 \\ 5 \\ 1 \\ -7 \\ -3 \\ 4 \end{pmatrix}$$