

3.4 Exercises

Problem 1 Let $\mathbf{A} = \begin{bmatrix} 5 & 7 \\ 2 & 3 \end{bmatrix}$, $\mathbf{B} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, and $\mathbf{I} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$.

Find \mathbf{B} so that $\mathbf{AB} = \mathbf{I} = \mathbf{BA}$: (In other words, find the correct \mathbf{B} so that \mathbf{A} and \mathbf{B} **DO** commute).

Problem 2 Find four different 2×2 matrices \mathbf{A} , with each main diagonal element either $+1$ or -1 , such that $\mathbf{A}^2 = \mathbf{I}$.