

PROBLEM 1: INITIALIZING A MATRIX

Please initialize the following matrix:

$$A = \begin{bmatrix} 34 & 45 \\ 17 & 6 \end{bmatrix}$$

and save it as the variable **A1**.

PROBLEM 2: MATRIX OPERATIONS

Consider the following matrices and vectors:

$$A = \begin{bmatrix} 1 & 2 \\ -1 & 1 \end{bmatrix}, B = \begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}, C = \begin{bmatrix} 2 & 0 & -3 \\ 0 & 0 & -1 \end{bmatrix}, D = \begin{bmatrix} 1 & 2 \\ 2 & 3 \\ -1 & 0 \end{bmatrix}, x = \begin{bmatrix} 1 \\ 0 \end{bmatrix}, y = \begin{bmatrix} 0 \\ 1 \end{bmatrix}, z = \begin{bmatrix} 1 \\ 2 \\ -1 \end{bmatrix}$$

Then save the following variables:

$$\mathbf{A2} = A + B, \mathbf{A3} = 3x - 4y, \mathbf{A4} = Ax, \mathbf{A5} = B(x - y), \mathbf{A6} = Dx, \mathbf{A7} = Dy + z, \mathbf{A8} = AB, \mathbf{A9} = BC, \text{ and } \mathbf{A10} = CD.$$