1. Use two methods to create the row vector “x” having 100 regularly spaced values starting at 6 and ending at 39.
2. Use two methods to create the column vector “y” having a regular spacing of 0.25 starting at -3 and ending at 12.
3. Create a vector “x” having six values starting at 0 and ending at 5. Create an array “A” whose first row contains the values 2x and whose second row contains the values 3x+10.
4. Create the matrix
\[
A = \begin{bmatrix}
3 & 5 & 9 & 3 \\
6 & 37 & 1 & 8 \\
2 & 8 & 6 & 0 \\
1 & 2 & 8 & 7 \\
\end{bmatrix}
\]
From “A”, create a vector “c” consisting of the elements in the third row of “A”, and create a vector “d” consisting of the elements in the third column of “A”. Create a 2x4 array “e” consisting of the first and third rows of “A”, and create a 3x3 array “f” consisting of the intersection of the first, third and fourth columns and the first, second, and fourth rows.
5. Using the functions “norm” and “length”, compute the numbers of elements and lengths of the vectors \(x= [1,5,18]\) and \(y = [2;-4;17;61;44]\).
6. For the above matrix “A”, use the functions “min” and “max” to find the minimum and maximum values of each row and column.
7. For the above matrix “A”, use the “sort” function to create new matrices one with each column sorted and another with each row sorted.
8. Given the matrices
\[
C = \begin{bmatrix}
6 & 7 \\
2 & 9 \\
\end{bmatrix}, \quad D = \begin{bmatrix}
-9 & 3 \\
7 & 5 \\
\end{bmatrix}
\]
a. Using element-by-element arithmetic, add, subtract, multiply, and divide “C” and “D”.
b. Vertically and horizontally concatenate “C” and “D”.
c. Experiment with other types of concatenation and array indexing.