MATLAB lesson 3: Matrices
Exercise sheet

1 Based on the lesson

These exercises are designed to test your understanding of the lesson content and can be completed by referring to the material in the lesson.

1. Create a matrix **a**, which is a 2*3 matrix (two rows, three columns) of ones
2. Create a 4*3 matrix **b**, of uniformly distributed random numbers
3. Create a 10*10 matrix **c**, of zeros
4. Set row 3, column 4 of matrix **c** equal to 4
5. Set row 2 equal to 5
6. Set rows 5 to 7 between columns 6 and 8 equal to 6
7. Set all elements of matrix c equal to 3
8. Calculate the matrix-square of **c**, i.e. the matrix product of **c***c
9. Calculate the elementwise square of matrix c
10. Divide every element in array **c** by 3
11. Create a 4*4 magic array, **m**
12. Find the minimum value of **m**
13. Create the following matrix:

$$\begin{matrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{matrix}$$

2 Using the MATLAB documentation

This section will require you to search within the MATLAB help

1. Find the indices of the minimum value of matrix **m** you previously created (consult the documentation for `min`). For example, if the minimum value is in row 2, column 3, their indices are (2,3).
2. Create an array of random numbers with 500 rows and 1 column
3. Test if any values are greater than 0.5, 0.9, 0.99.
4. Find the indices where values are greater than 0.99
5. Find if all values are greater than 0.5, 0.1 and 0.01