

CSC 522 : Automated Learning and Data Analysis

Homework 2

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1 Question 1

Write code in R or Matlab to perform each of the following tasks:

1. Generate a 3×3 matrix with input containing the sequence 1, 2, ... 9.

Ans: $x \leftarrow matrix(c(1:9), 3, 3)$

2. a) Access elements from the 2nd and 3rd columns only.

Ans:

2nd column alone : $x[,2] \Rightarrow [1] 4 5 6$

3rd column alone : $x[,3] \Rightarrow [1] 7 8 9$

both columns : $x[,2:3]$

\Rightarrow

	[, 1]	[, 2]
[1,]	4	7
[2,]	5	8
[3,]	6	9

- b) Access elements of the 2nd and 3rd rows only

Ans:

2nd row alone : $x[2,] \Rightarrow [1] 2 5 8$

3rd row alone : $x[3,] \Rightarrow [1] 3 6 9$

both rows : $x[2:3,]$

\Rightarrow

	[, 1]	[, 2]	[, 3]
[1,]	2	5	8
[2,]	3	6	9

- c) Access rows 1 and 3 only? (see `rbind()` function in R and `vertcat()` in matlab)

Ans:

$x2 \leftarrow rbind(x[2,], x[3,]) \Rightarrow$

	[, 1]	[, 2]	[, 3]
[1,]	1	4	7
[2,]	3	6	9

- d) Calculate sum of the 2nd row, the diagonal and the 3rd column in the matrix.

Ans: