

## Practice Exercises Arrays

### Instructions:

Download the Array.mat file and save it in your current MATLAB directory. At the command prompt, type `>> load Array`. Look in your workspace window. You should see a 1-d array called *vector* (1x12), and a 2-d array called *matrix* (10x5).

All of these problems refer to the arrays *vector* and *matrix* downloaded from the Array.mat file.

Don't change the values in vector or matrix unless prompted. If you do inadvertently change them, just re-run the command `>> load Array` to recover the original arrays.

### Problem 1: 1-d (vector) Array Indexing

Execute the following command first so you know what *vector* looks like.

```
>> vector
```

- a) Give a single MATLAB command that will pull out entries 5, 6, 7, 8, 9 out of the 1-d array, *vector* and put them in another vector called *vectorA*. **Show both your command and the results here:**
- b) Give a single MATLAB command that will pull out entries 3, 9, and 11 out of the 1-d array, *vector* and put them in another vector called *vectorB*. **Show both your command and the results here:**
- c) Give a single MATLAB command that will overwrite the 3<sup>rd</sup> entry in *vectorB* with a value of 12. **Show both your command and the results here:**

### Problem 2: 2-d (matrix) Indexing

Execute the following command first so you know what *matrix* looks like.

```
>> matrix
```

- a) Give a single MATLAB command that will pull out rows 5, 6, and 7 out of the 2-d array, *matrix* and put them in another matrix called *matrixA*. **Show both your command and the results here:**

- b) Give a single MATLAB command that will pull out columns 2, 3, and 4 out of the 2-d array, *matrix* and put them in another matrix called *matrixB*. **Show both your command and the results here:**
- c) Give a single MATLAB command that will replace the values in rows 1 & 2 and columns 2 & 3 of *matrixB* with the following values:

$$\begin{bmatrix} 42 & 73 \\ -1 & 0 \end{bmatrix}$$

**Show both your command and the results here:**

**Problem 3: Arrays, Relational Operators, and Useful functions (sum and find)**

This problem refers to the array *vector* loaded from the Array.mat file. Again, don't overwrite the values in the array *vector*. If you do, re-load Array.mat. **For each of these commands, show the result and explain the result in words.**

(a) `vector > 0`

(b) `vector(3:10) > 0`

(c) `matrix < 3`

(d) `0 < matrix & matrix < 2`

(e) `matrix(1:3,2:4) > 2`