

Homework #3

Scientific Computing (501125-2)

Spring 2021

Due: Wednesday March 17, 2021, 11:59 pm via Blackboard

1) Using **built-in** function, write the Matlab command and show the result of each of the following

- o Find the square root of variable x where $x = 9$
- o Find the square root of variable y where $y = [100, 4, 25]$
- o Compute the remainder of the division of x / y where $x = 16$ and $y = 6$
- o Compute the remainder of the division of x / y where $x = [11 \ 12 \ 13 \ 8 \ 10]$ and $y = 5$
- o Compute the remainder of the division of x / y where $x = [10 \ 8 \ 15 \ 18 \ 13]$ and $y = [6 \ 3 \ 4 \ 7 \ 2]$
- o Compute the sum of variable x where $x = [2 \ 4 \ 5]$
- o Compute the sum of variable x where $x = [3 \ 6 \ 10; 12 \ 11 \ 8]$
- o Find the maximum of variable x where $x = [1 \ 23 \ 50]$
- o Find the maximum of variable x where $x = [12 \ 18 \ 1; 17 \ 20 \ 0]$

2) Given the following Matlab commands

$x = [8 \ 9 \ 11; 7 \ 10 \ 5]$

$[a, b] = \max(x)$

- o What the result of the command $[a, b] = \max(x)$?

- o What is a?
 - o What is b?
- 3) What are the two kinds of M-files?
- 4) What is the main difference between **Scripts** and **Functions**?
- 5) Write a script named **script100** that does the following
- o Defines a magic vector named M
 - o Finds the value of vector W where W is a row vector that contains the sum of each column
 - o Finds the value of vector R where R is a column vector that contains the sum of each row
- 6) What command are you going to use to call the script you built in Question 5.
- 7) Write a user-defined function named NEWSUM.m that does the following
- o This function accepts two numbers namely a and b
 - o Returns the sum of these two variables
 - o Please name the output variable k
- 8) What command are you going to use to call the function you built in Question 7.