Loops

1. a)) A for loop that multiplies all even numbers from 2 to 10.

   b) A while loop that multiplies all even numbers from 2 to 10.

2. a) A for loop that assigns the values 10, 20, 30, 40, and 50 to a vector.

   b) A while loop that assigns the values 10, 20, 30, 40, and 50 to a vector.

   c) Is there a simpler way to do this avoiding loops?

3. Given the vector x=[1 8 3 9 0 1] use a for loop to:

   a) Add up the values of all elements in x.

   b) Compute the cumulative sum, i.e 1, 9, 12, 21, 21, 22, of the elements in x.

   You can check your results using the built-in functions sum and cumsum.

4. The factorial of a non-negative integer is defined as:

$$n! = n * (n-1) * (n-2) * \cdots * 1$$

   where $n! = 1$ when n = 0. For example, 5! = 5*4*3*2*1 which is 120.

   Use a for loop to compute and print factorials. You should prompt the user for a non-negative integer and check it is indeed non-negative. There is a built-in function called factorial, therefore you should use a different name for your script to avoid any confusion.