

Problem IV (25%)

Write a MATLAB function M-File that inputs the sum and product of the roots of a quadratic function and outputs the value of this function for an arbitrary array of data x.

Problem V (25%)

Up-Down algorithm is described as follow:

- 1- Let N be some positive integer.
- 2- If N is even, divide it by 2.
- 3- On the other hand, if it is odd, multiply it by 3 and add 1.
- 4- Repeat until N becomes 1.

It appears that this algorithm converges to 1 for all numbers N. Write a MATLAB sequence code to implement this algorithm. Your code should compute the number iterations this algorithm will need to converge for a specific scalar number. **Hint: Check the MATLAB command “rem”**