

## Problems for Tutorial-01: Basics of Scilab

1. Write a Scilab script to compute the following:

(a)  $n_1 = \sqrt{(Ax - y)^T (Ax - y)}$

(b)  $n_2 =$  Sum of elements of  $(Ax - y)$  (Hint: Use sum command)

(c)  $n_3 =$  Sum of square of the elements of  $(Ax - y)$  (Hint: Use for loop)

where  $A = \begin{bmatrix} a & a^2 & a^3 \\ b & b^2 & b^3 \\ c & c^2 & c^3 \end{bmatrix}$ ,  $a = 1, b = 2, c = 3$ ,  $x = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$ ,  $y = \begin{bmatrix} 4 \\ 12 \\ 36 \end{bmatrix}$ .

2. Write a Scilab script to save the solution of Problem 1, i.e.,  $[n_1 \ n_2 \ n_3]$  as `Problem2.csv` file.

**Solution:**  $n_1 = 3.7416574$ ,  $n_2 = 4$ , and  $n_3 = 14$ .