Text

Description automatically generated with low confidence

1.46:

Chart, line chart

Description automatically generated

1.47:

A picture containing graphical user interface

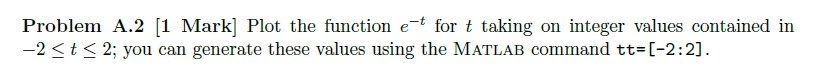
Description automatically generated

Text, letter

Description automatically generated

Chart, line chart

Description automatically generated



Text

Description automatically generated

Chart, line chart

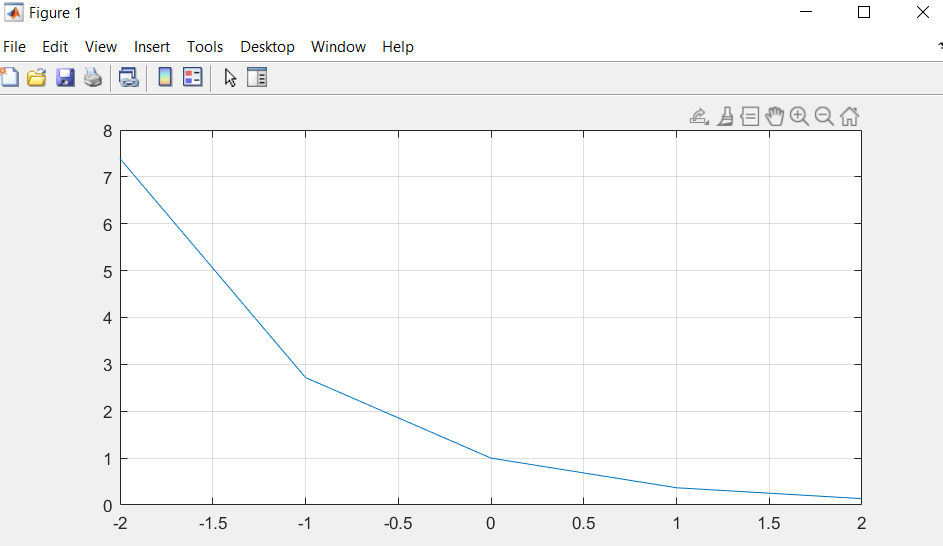
Description automatically generated



Chart, line chart

Description automatically generated

A1-1.46



A2

The graphs are very similar, in fact they are identical, as cos(2\*pi\*t) is one for all integer values in the range t = [-2:2] meaning at these points the graph at A1-1.46 is f(t) = e-t \*(1) which is the same function for A2 f(t) = e-t thus both functions resulted in the same graph for integer values in the range t = [-2:2].

A picture containing text

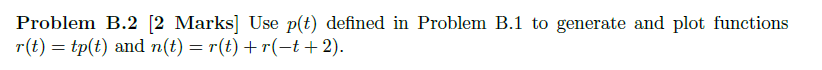
Description automatically generated

Text, letter

Description automatically generated

Chart, histogram

Description automatically generated



Text, letter

Description automatically generated

Chart, line chart

Description automatically generated

Text, letter

Description automatically generated Chart, line chart

Description automatically generated



Text, letter

Description automatically generated

Chart, line chart

Description automatically generated

Text

Description automatically generated

Chart, line chart

Description automatically generated

A screenshot of a computer

Description automatically generated with low confidence

Chart, line chart

Description automatically generated

Text, letter

Description automatically generated

Chart, line chart

Description automatically generated



Chart, line chart

Description automatically generatedChart, line chart

Description automatically generated

Both graphs were manipulated by similar factors (expanded by a factor of 2 on x axis and shifted by a ½ and ¼ to the right respectively ) however n2 was expanded then shifted while n4 was shifted then expanded. This resulted in 2 different transformations. The starting point of n2 is at (-0.5, 0) but that of n4 is (-1,0). The peak of n2 is at (1.5, 1) but that of n4 is (2, 0.75). n4 does not have the whole graph in the range of t = [-2 : 2] (not even half) while the graph of n2 has more than half the graph in that range. This concludes that order of transformations on a graph affect the final result.



Text

Description automatically generated

Chart, line chart

Description automatically generated



Text

Description automatically generated with low confidence

Chart, line chart

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Chart, line chart

Description automatically generated

Using a loop:

Text

Description automatically generated

Chart, line chart

Description automatically generated



S1 [0 : 0:01 : 4]

S3 [0 : 0:01 : 4]



S5 [0 : 0:01 : 4]

S7 [0 : 0:01 : 4]

4x 401 = 1604

Graphical user interface, text, application, table

Description automatically generated

1. A( : ) returns all the values in the matrix in order
2. A([ 2 4 7 ]) returns the values at position 2 4 7
3. [ A >= 0.2 ] returns a 5 x 4 matrix with 1 (true) in each cell that has a value greater than or equal to 0.2 and 0 (false) in each cell that doesn’t
4. A([ A >= 0.2 ]) returns the number in the matrix with values greater than or equal to 0.2 in order
5. A([ A >= 0.2 ])=0 returns matrix A but with all values greater than or equal to 0.2 set to 0

Order in a matrix:

|  |  |  |  |
| --- | --- | --- | --- |
| 1st | 6th | 11th | 16th |
| 2nd | 7th | 12th | 17th |
| 3rd | 8th | 13th | 18th |
| 4th | 9th | 14th | 19th |
| 5th | 10th | 15th | 20th |

A picture containing table

Description automatically generatedOutcome:

Table

Description automatically generated

Text, Word

Description automatically generated Text

Description automatically generated

a)

Text, letter

Description automatically generated

b)



c)

Text

Description automatically generated

A picture containing graphical user interface

Description automatically generated

The single line command was 426.7% faster than the nested loop.

Text, letter

Description automatically generated

Text, letter

Description automatically generated

Text

Description automatically generated