# Digital Geometry Processing (236329)

## HW 1

ID1: 204030720

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### Q1.4

x =

0.3029

y =

4.0985e+03

z =

0.1046

### Q1.5

xMat =

1.0e+05 \*

1.8405 1.8405 1.8405 1.8405 1.8405 1.8405 1.8405 1.8405 1.8405

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yMat =

1.0e+03 \*

0.0085 0.0406 0.0244 0.0705

0.0251 0.1200 0.0720 0.2080

0.0879 0.4200 0.2520 0.7280

0.5715 2.7300 1.6380 4.7320

zMat =

0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0 0

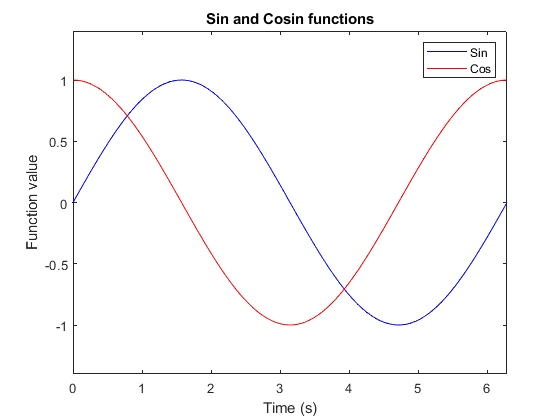
0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0 0

### Q1.7



### Q1 – Throwing a Ball

The ball hits the ground at a distance of 2.582108e+00 meters.

Chart

Description automatically generated

Chart, line chart

Description automatically generated

### Q2 – Convergence of an Infinite Series

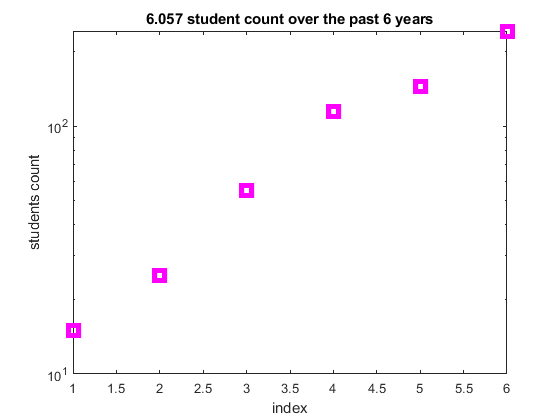
Chart

Description automatically generated

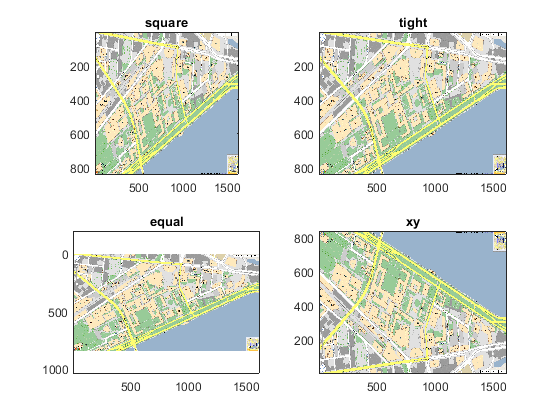
Chart

Description automatically generated

### Q2.1 – Semilog Plot



### Q2.2 – Subplot and Axis Modes

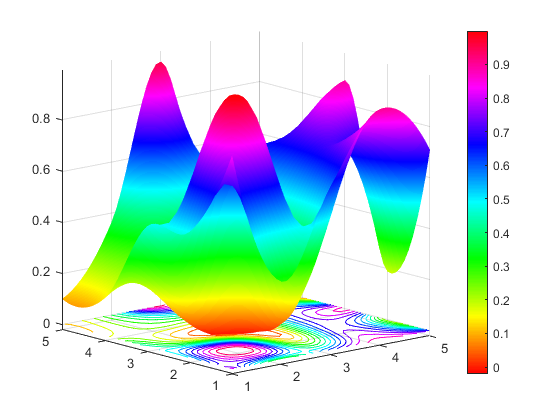


### Q2.3 – Bar Graph

Chart, bar chart

Description automatically generated

### Q2.4 – Interpolation and surface plots



### Q2.5 – Fun with Find

>> x

x =

1 2 3 4

-4 -3 -2 -1

>> val

val =

0

>> findNearest(x, val)

ans =

1

8

### Q2.6 – Loops and Flow Control

>> loopTest(10)

1 is NOT divisible by 2 or 3

2 is divisible by 2

3 is divisible by 3

4 is divisible by 2

5 is NOT divisible by 2 or 3

6 is divisible by 2 AND 3

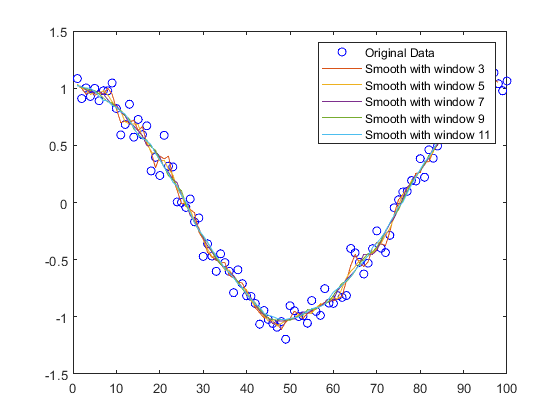
7 is NOT divisible by 2 or 3

8 is divisible by 2

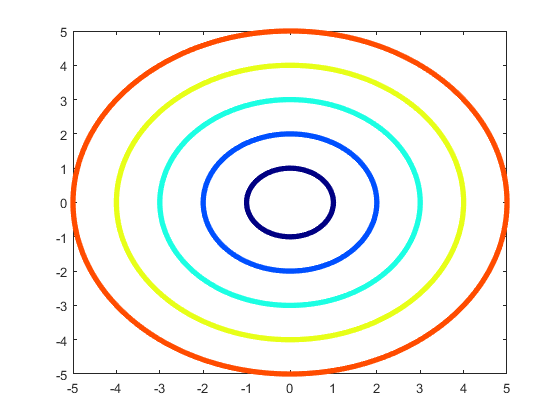
9 is divisible by 3

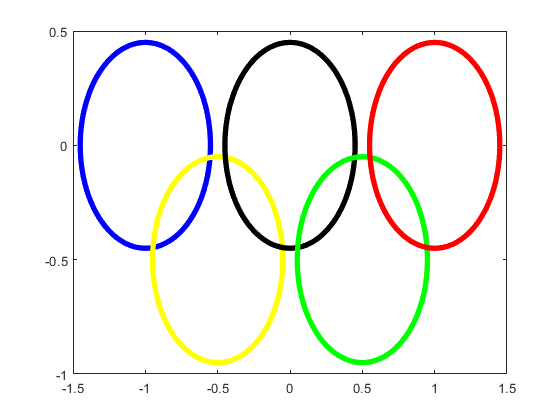
10 is divisible by 2

### Q2.7 – Smoothing Filter

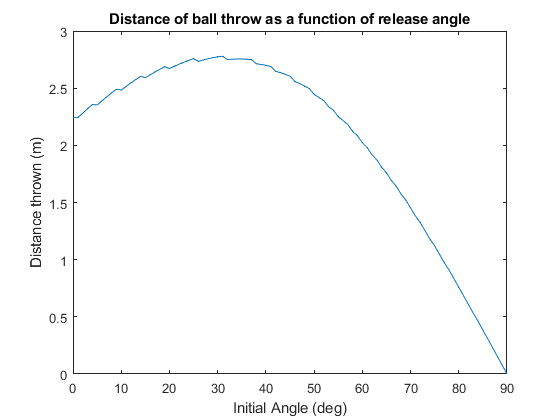


### Q2.8 – Plot a Circle

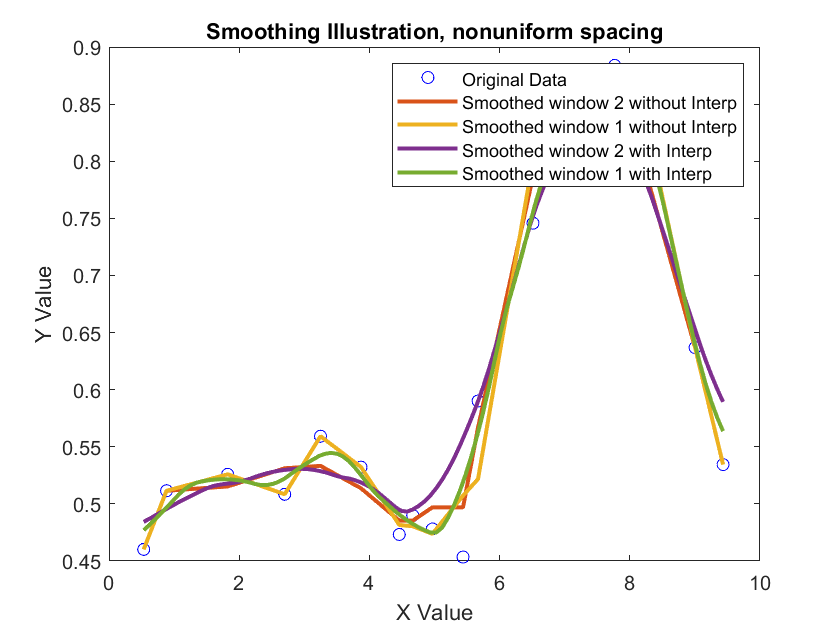




### Q2.9 – Functions



### Q2.10 – Smoothing nonuniformly sampled data



### Q2.11 - Buy and sell a stock

endValueInit100 =

100

endValueInit100K =

6.1231e+07