

```
1 /opt/anaconda3/bin/python /Users/nickusich/Documents/ML/Homework/HW1/HW1.py
2 Question 4 -----
3
4
5 4.1
6 [[ 19  38  57]
7  [ 38  76 114]
8  [ 57 114 171]]
9
10
11 4.2
12 [[ 27]
13 [-42]
14 [ 21]]
15
16
17 4.3
18 [[ 290 4080]
19 [ 480 2800]]
20
21
22 4.4
23 [[-42  78 254 156]
24 [-36  -4  76 116]
25 [ -6  34  82  28]]
26
27
28 4.5
29 [[ 479 8143]
30 [ 958 6706]]
31
32
33 4.6
34 [[ 306 3602]]
35
36
37 4.7
38 [[ 12]
39 [-22]
40 [ 30]]
41
42
43 4.8
44 [[ 57 -33  13]]
45
46
47 4.9
48 [[ 12  24  36]
49 [-11 -22 -33]
50 [ 10  20  30]]
51
52
53 4.10
54 [[ 56  34]
55 [ 35 144]
56 [133 284]
57 [ 71 216]]
58
59
60 Question 5 -----
61
62
63 5.1
64 [2 9]
65
66
67 5.2
68 [2 1]
69
70
71 5.3
72 1
73
74
75 5.4
76 [[ 3  3]
77 [11  2]]
78
79
80 5.5
81 [[ 4  6]
82 [22  8]]
83
84
85 5.6
86 [[ 2]
87 [12]]
88
89
90 5.7
```

```
91 [[ 2 4]
92 [ 6 12]]
93
94
95 5.8
96 [[ 8 3]
97 [11 1]]
98
99
100 5.9
101 [[ 2 7]
102 [ 9 19]]
103
104
105 Question 6 -----
106
107
108 v-norms:
109     L0: 1
110     L1: 5.0
111     L2: 5.0
112     L-inf: 5.0
113
114
115 w-norms:
116     L0: 3
117     L1: 10.0
118     L2: 8.12403840463596
119     L-inf: 8.0
120
121
122 x-norms:
123     L0: 3
124     L1: 6.0
125     L2: 3.741657386773941
126     L-inf: 3.0
127
128
129 y-norms:
130     L0: 3
131     L1: 6.0
132     L2: 3.7416573867739413
133     L-inf: 3.0
134
135
136 z-norms:
137     L0: 2
138     L1: 7.0
139     L2: 5.385164807134504
140     L-inf: 5.0
141
142
143 Question 7 -----
144 [[1 2 1]
145 [2 0 0]
146 [2 1 1]
147 [1 2 5]]
148
149 Process finished with exit code 0
150
```