

Appendix

- 3(a)

```
1 >> a1
2
3 tension =
4
5     70.0000
6     93.3333
7     70.0000
8     8.4000
9
10
11 kappa =
12
13     534.3333
14
15
16 max_tension =
17
18     93.3333
19
20
21 tension =
22
23     70.0000
24     120.0000
25     150.0000
26     160.0000
27     150.0000
28     120.0000
29     70.0000
30     8.4000
31
32
33 kappa =
34
35     ..... 2401
36
37
38 max_tension =
39
40     160.0000
41
42
43 tension =
44
45     70.0000
46     130.6667
```

```
47 182.0000
48 224.0000
49 256.6667
50 280.0000
51 294.0000
52 298.6667
53 294.0000
54 280.0000
55 256.6667
56 224.0000
57 182.0000
58 130.6667
59 70.0000
60 8.4000
61
62
63 kappa =
64
65 1.0134e+04
66
67
68 max_tension =
69
70 298.6667
71
72
73 tension =
74
75 70.0000
76 135.4839
77 196.4516
78 252.9032
79 304.8387
80 352.2581
81 395.1613
82 433.5484
83 467.4194
84 496.7742
85 521.6129
86 541.9355
87 557.7419
88 569.0323
89 575.8065
90 578.0645
91 575.8065
92 569.0323
93 557.7419
94 541.9355
95 521.6129
96 496.7742
97 467.4194
98 433.5484
99 395.1613
100 352.2581
101 304.8387
102 252.9032
103 196.4516
```

```
104 135.4839
105 70.0000
106 8.4000
107
108
109 kappa =
110
111 4.1601e+04
112
113
114 max_tension =
115
116 578.0645
```

```
1 >> a2
2
3 tension =
4
5 40.6554
6 57.6209
7 46.1445
8 7.9723
9
10
11 max_tension =
12
13 57.6209
14
15
16 tension =
17
18 49.2640
19 88.1810
20 118.5932
21 140.2088
22 132.1716
23 114.9699
24 67.4651
25 8.2501
26
27
28 max_tension =
29
30 140.2088
31
32
33 tension =
34
35 63.5828
36 123.3437
37 179.3292
38 215.0138
39 249.7238
40 270.1365
41 282.4154
42 286.6888
43 285.9224
```

```

44 270.2156
45 239.7655
46 205.8997
47 168.2215
48 118.5321
49 65.2779
50 8.4014
51
52
53 max_tension =
54
55 286.6888
56
57
58 tension =
59
60 62.9462
61 124.0765
62 183.2369
63 235.7412
64 286.1178
65 332.4689
66 373.7173
67 410.8183
68 441.0051
69 467.1533
70 491.3640
71 512.2901
72 531.0976
73 547.7831
74 552.0703
75 555.3762
76 554.9150
77 547.2686
78 536.7874
79 524.7013
80 507.5338
81 484.3778
82 458.8084
83 429.3420
84 394.1113
85 349.6116
86 299.7345
87 247.9285
88 195.5936
89 139.4205
90 73.5348
91 8.3200
92
93
94 max_tension =
95
96 555.3762

```

- 3(b)

```
1 >> b1
2
3 L =
4
5     (1,1)      1
6     (2,1)     -1
7     (2,2)      1
8     (3,2)     -1
9     (3,3)      1
10    (4,3)     -1
11    (4,4)      1
12
13
14 U =
15
16    (1,1)      1.0000
17    (2,2)      1.0000
18    (3,3)      1.0000
19    (1,4)     -50.0000
20    (2,4)    -116.6667
21    (3,4)    -200.0000
22    (4,4)    -300.0000
23
24
25 P =
26
27    (1,1)      1
28    (2,2)      1
29    (3,3)      1
30    (4,4)      1
```