

2.618033988749895
15.099657722502098
98.867738507227628

O O O O O O O O O O O O O O O O O O O O

C =

1.0e+02 *

0.026180339887499
0.150996577225021
0.988677385072276
6.864349418185958

[illegible]

0

C =

1.0e+03 *

0.002618033988750
0.015099657722502
0.098867738507228
0.686434941818596
4.924371056611024

[illegible]

C =

1.0e+04 *

0.000261803398875
0.001509965772250
0.009886773850723
0.068643494181860
0.492437105661102
3.606116088020551

[illegible]

C =

1.0e+05 *

```
0.000026180339887
0.000150996577225
0.000988677385072
0.006864349418186
0.049243710566110
0.360611608802055
2.678167009076525
```

0
0
0
0
0
0

C =

[illegible]

32
0
0
0
0
0
0
0
0
0
0
0
0
0
0

```
0.000000000002618
0.000000000015100
0.000000000098868
```

```
0.000000000686435
0.00000004924371
0.00000036061161
0.00000267816701
0.000002009396380
0.000015193229677
0.000115575244509
0.000883478688194
0.006780588417474
0.052214928893118
0.403235494027163
3.121681002097844
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
```

C =

```
1.0e+13 *

0.000000000000262
0.000000000001510
0.000000000009887
0.00000000068643
0.00000000492437
0.00000003606116
0.00000026781670
0.00000200939638
0.000001519322968
0.000011557524451
0.000088347868819
0.000678058841747
0.005221492889312
0.040323549402716
0.312168100209784
2.421931852593987
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
```

C =

```
1.0e+14 *

0.000000000000026
0.000000000000151
0.000000000009889
0.0000000006864
0.0000000049244
0.00000000360612
0.00000002678167
0.00000020093964
0.000000151932297
0.000001155752445
0.00008834786882
0.00067805884175
0.000522149288931
0.004032354940272
0.031216810020978
0.242193185259399
1.882589670306160
0
0
0
0
0
0
0
```

0
0
0
0
0
0
0

C =

1.0e+15 *

0.000000000000003
0.000000000000015
0.000000000000099
0.000000000000686
0.000000000004924
0.00000000036061
0.000000000267817
0.000000002009396
0.000000015193230
0.000000115575245
0.000000883478688
0.000006780588417
0.000052214928893
0.000403235494027
0.003121681002098
0.024219318525940
0.188258967030616
1.465743747535147

0
0
0
0
0
0
0
0
0
0
0
0
0
0

C =

1.0e+16 *

0.000000000000000
0.000000000000002
0.000000000000010
0.000000000000069
0.000000000000492
0.000000000003606
0.00000000026782
0.000000000200940
0.000000001519323
0.000000011557524
0.000000088347869
0.000000678058842
0.000005221492889
0.000040323549403
0.000312168100210
0.002421931852594
0.018825896703062
0.146574374753515
1.129491804131115

0
0
0
0
0
0
0
0
0
0
0
0

C =

1.0e+16 *

0.000000000000000
0.000000000000002
0.000000000000010
0.000000000000069
0.000000000000492
0.000000000003606
0.00000000026782
0.000000000200940

0.000000001519323
0.000000011557524
0.000000088347869
0.000000678058842
0.000005221492889
0.000040323549403
0.000312168100210
0.002421931852594
0.018825896703062
0.146574374753515
1.129491804131115
8.698691609468558
0
0
0
0
0
0
0
0
0

C =

1.0e+18 *

0.000000000000000
0.000000000000000
0.000000000000000
0.000000000000001
0.000000000000005
0.000000000000036
0.000000000000268
0.000000000002009
0.00000000015193
0.00000000115575
0.00000000883479
0.00000006780588
0.00000052214929
0.00000403235494
0.00003121681002
0.000024219318526
0.000188258967031
0.001465743747535
0.011294918041311
0.086986916094686
1.268785879046714
0
0
0
0
0
0
0
0
0

C =

1.0e+18 *

0.000000000000000
0.000000000000000
0.000000000000000
0.000000000000001
0.000000000000005
0.000000000000036
0.000000000000268
0.000000000002009
0.00000000015193
0.00000000115575
0.00000000883479
0.00000006780588
0.00000052214929
0.00000403235494
0.00003121681002
0.000024219318526
0.000188258967031
0.001465743747535
0.011294918041311
0.086986916094686
1.268785879046714
1.737938326404992
0
0
0
0
0
0
0

0

C =

1.0e+18 *

0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000001
0.0000000000000005
0.0000000000000036
0.0000000000000268
0.0000000000002009
0.0000000000015193
0.0000000000115575
0.000000000883479
0.000000006780588
0.000000052214929
0.000000403235494
0.000003121681002
0.000024219318526
0.000188258967031
0.001465743747535
0.011294918041311
0.086986916094686
1.268785879046714
1.737938326404992
2.365785090006721
0
0
0
0
0
0

C =

1.0e+19 *

0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000004
0.0000000000000027
0.0000000000000201
0.000000000001519
0.000000000011558
0.000000000088348
0.00000000678059
0.000000005221493
0.000000040323549
0.000000312168100
0.000002421931853
0.000018825896703
0.000146574374754
0.001129491804131
0.008698691609469
0.126878587904671
0.173793832640499
0.236578509000672
1.416517298572189
0
0
0
0
0
0

C =

1.0e+19 *

0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000004
0.0000000000000027
0.0000000000000201
0.000000000001519
0.000000000011558
0.000000000088348
0.00000000678059
0.000000005221493

0.000000040323549
0.000000312168100
0.000002421931853
0.000018825896703
0.000146574374754
0.001129491804131
0.008698691609469
0.126878587904671
0.173793832640499
0.236578509000672
1.416517298572189
0.360973987430084
0
0
0
0

C =

1.0e+19 *

0.000000000000000
0.000000000000000
0.000000000000000
0.000000000000000
0.000000000000000
0.000000000000000
0.000000000000004
0.000000000000027
0.000000000000201
0.000000000001519
0.000000000011558
0.000000000088348
0.000000000678059
0.00000005221493
0.00000040323549
0.00000312168100
0.000002421931853
0.000018825896703
0.000146574374754
0.001129491804131
0.008698691609469
0.126878587904671
0.173793832640499
0.236578509000672
1.416517298572189
0.360973987430084
0.631696556867365
0
0
0

C =

1.0e+19 *

0.000000000000000
0.000000000000000
0.000000000000000
0.000000000000000
0.000000000000000
0.000000000000004
0.000000000000027
0.000000000000201
0.000000000001519
0.000000000011558
0.000000000088348
0.000000000678059
0.00000005221493
0.00000040323549
0.00000312168100
0.000002421931853
0.000018825896703
0.000146574374754
0.001129491804131
0.008698691609469
0.126878587904671
0.173793832640499
0.236578509000672
1.416517298572189
0.360973987430084
0.631696556867365
0.826987866754702
0
0

C =

0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000004
0.0000000000000027
0.0000000000000021
0.0000000000001519
0.000000000011558
0.000000000008348
0.0000000000678059
0.0000000005221493
0.0000000043323549
0.0000000312168100
0.000002421391853
0.000018825896301
0.0001465734374754
0.0011229491804131
0.0008968916094616
0.126878587904671
0.173793832640499
0.2365785000000672
1.416517298572189
0.360973987430084
0.631696556867365
0.826987866754702
0.294629420061233

0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000000
0.0000000000000004
0.0000000000000027
0.0000000000000021
0.0000000000001519
0.00000000000011558
0.00000000000088346
0.00000000000678059
0.0000000005221493
0.0000000403232549
0.000000312168100
0.000000242318153
0.000018825896703
0.0001465734374754
0.0011229491804131
0.008986916094616
0.126878587904671
0.173793832640097
0.236758590004692
1.416517298572189
0.360973987430084
0.631696556867365
0.826897866547402
0.294629240061233
3.905527425950357

3.152946861735881

O O O O O O O O O O O O O O O O

[illegible]

0
0
0
0
0

[illegible]

C2 =

1.0e+05 *

```
0.000031529468617
0.000166680067823
0.000934981926997
0.005379402073303
0.031381800580911
0.184663637481018
1.093085776590398
```

[illegible]

c2 =

1.0e+05 *

0.000031529468617
0.000166680067823
0.000934981926997
0.005379402073303
0.031381800580911
0.184663637481018
1.093085776590398
6.498219810816215

O O O O O O O O O O O O O O O

C2 =

1.0e+06 *

```
0.000003152946862
0.000016668006782
0.000093498192700
0.000537940207330
0.003138180058091
0.018466363748102
0.109308577659040
0.649821981081621
3.875732367539766
```

0
0
0
0
0

1.0e+08 *

[illegible]

1.0e+09 *

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

1.0e+10 *

0
0
0
0
0

0
0
0
0
0
0
0
0
0
0

C2 =

1.0e+11 *

0.000000000031529
0.000000000166680
0.000000000934982
0.000000005379402
0.000000031381801
0.000000184663637
0.000001093085777
0.000006498219811
0.000038757323675
0.000231754968116
0.001388689985620
0.008335366008734
0.050103462079271
0.301537895825615
1.816662033953544

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

C2 =

1.0e+12 *

0.000000000003153
0.00000000016668
0.00000000093498
0.000000000537940
0.000000003138180
0.000000018466364
0.000000109308578
0.00000649821981
0.00003875732368
0.000023175496812
0.000138868998562
0.000833536600873
0.005010346207927
0.030153789582562
0.181666203395354
1.095481802147560

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

C2 =

1.0e+12 *

0.000000000003153
0.00000000016668
0.00000000093498
0.000000000537940

0
0
0
0
0
0
0
0
0
0
0
0

1.0e+13 *

0
0
0
0
0
0
0
0
0
0
0
0

1.0e+14 *

0
0
0
0
0

0
0
0
0
0

C2 =

1.0e+15 *

0.0000000000000003
0.0000000000000017
0.0000000000000093
0.0000000000000538
0.0000000000003138
0.000000000018466
0.000000000109309
0.000000000649822
0.000000003875732
0.000000023175497
0.000000138868999
0.00000833536601
0.000005010346208
0.000030153789583
0.000181666203395
0.001095481802148
0.006611224024660
0.039935176619493
0.241173575489468
1.463594765573816

0
0
0
0
0
0
0
0
0
0

C2 =

1.0e+15 *

0.0000000000000003
0.0000000000000017
0.0000000000000093
0.0000000000000538
0.0000000000003138
0.000000000018466
0.000000000109309
0.000000000649822
0.000000003875732
0.000000023175497
0.000000138868999
0.00000833536601
0.000005010346208
0.000030153789583
0.000181666203395
0.001095481802148
0.006611224024660
0.039935176619493
0.241173575489468
1.463594765573816
8.540004394849523

0
0
0
0
0
0
0
0
0

C2 =

1.0e+16 *

0.0000000000000000
0.0000000000000002
0.0000000000000009
0.0000000000000054
0.0000000000000314
0.000000000001847
0.000000000010931
0.00000000064982
0.00000000387573

0.000000002317550
0.000000013886900
0.000000083353660
0.000000501034621
0.000003015378958
0.000018166620340
0.000109548180215
0.000661122402466
0.003993517661949
0.024117357548947
0.146359476557382
0.854000439484952
5.519103546223878
0
0
0
0
0
0
0

C2 =

1.0e+17 *

0.000000000000000
0.000000000000000
0.000000000000001
0.000000000000005
0.000000000000031
0.000000000000185
0.000000000001093
0.000000000006498
0.00000000038757
0.00000000231755
0.00000001388690
0.00000008335366
0.00000050103462
0.00000301537896
0.00001816662034
0.00010954818021
0.00066112240247
0.00399351766195
0.02411735754895
0.14635947655738
0.085400043948495
0.551910354622388
2.264830123228188
0
0
0
0
0
0
0

C2 =

1.0e+17 *

0.000000000000000
0.000000000000000
0.000000000000001
0.000000000000005
0.000000000000031
0.000000000000185
0.000000000001093
0.000000000006498
0.00000000038757
0.00000000231755
0.00000001388690
0.00000008335366
0.00000050103462
0.00000301537896
0.00001816662034
0.00010954818021
0.00066112240247
0.00399351766195
0.02411735754895
0.14635947655738
0.085400043948495
0.551910354622388
2.264830123228188
2.285585552110712
0
0
0
0
0
0

C2 =

1.0e+17 *

0.000000000000000
0.000000000000000
0.000000000000001
0.000000000000005
0.000000000000031
0.000000000000185
0.000000000001093
0.000000000006498
0.00000000038757
0.00000000231755
0.00000001388690
0.00000008335366
0.00000050103462
0.00000301537896
0.00001816662034
0.000010954818021
0.000066112240247
0.000399351766195
0.002411735754895
0.014635947655738
0.085400043948495
0.551910354622388
2.264830123228188
2.285585552110712
2.033889351503177
0
0
0
0

C2 =

1.0e+17 *

0.000000000000000
0.000000000000000
0.000000000000001
0.000000000000005
0.000000000000031
0.000000000000185
0.000000000001093
0.000000000006498
0.00000000038757
0.00000000231755
0.00000001388690
0.00000008335366
0.00000050103462
0.00000301537896
0.00001816662034
0.000010954818021
0.000066112240247
0.000399351766195
0.002411735754895
0.014635947655738
0.085400043948495
0.551910354622388
2.264830123228188
2.285585552110712
2.033889351503177
3.331690512212583
0
0
0

C2 =

1.0e+17 *

0.000000000000000
0.000000000000000
0.000000000000001
0.000000000000005
0.000000000000031
0.000000000000185
0.000000000001093
0.000000000006498
0.00000000038757
0.00000000231755
0.00000001388690
0.00000008335366
0.00000050103462
0.00000301537896

```

0.000001816662034
0.000010954818021
0.000066112240247
0.000399351766195
0.002411735754895
0.014635947655738
0.085400043948495
0.551910354622388
2.264830123228188
2.285585552110712
2.033889351503177
3.331690512212583
2.617475526314923
0
0

```

C2 =

```

1.0e+17 *

```

```

0.000000000000000
0.000000000000000
0.000000000000001
0.000000000000005
0.000000000000031
0.000000000000185
0.000000000001093
0.000000000006498
0.000000000038757
0.000000000231755
0.00000001388690
0.00000008335366
0.00000050103462
0.00000301537896
0.00001816662034
0.00010954818021
0.00066112240247
0.00399351766195
0.02411735754895
0.14635947655738
0.85400043948495
0.551910354622388
2.264830123228188
2.285585552110712
2.033889351503177
3.331690512212583
2.617475526314923
3.175836547198190
0

```

C2 =

```

1.0e+17 *

```

```

0.000000000000000
0.000000000000000
0.000000000000001
0.000000000000005
0.000000000000031
0.000000000000185
0.000000000001093
0.000000000006498
0.000000000038757
0.000000000231755
0.00000001388690
0.00000008335366
0.00000050103462
0.00000301537896
0.00001816662034
0.00010954818021
0.00066112240247
0.00399351766195
0.02411735754895
0.14635947655738
0.85400043948495
0.551910354622388
2.264830123228188
2.285585552110712
2.033889351503177
3.331690512212583
2.617475526314923
3.175836547198190
3.261114208147999

```

For $m = n$, A is a square matrix, and gives large conditon numbers as n increases, compared to when $m=2n-1$. Hence the dimension of the matrix affects the condition number.

