MATRIX A

| | |
|---|---|
| 60.140, -16.70, -18.25, 3.3200, -48.60 | STARTING VECTOR<br>1.0000 |
| 154.80, -37.56, -62.80, 25.400, -131.7 | .00000 |
| -174.4, 51.900, 65.340, -15.10, 149.70 | .00000 |
| -185.7, 51.600, 73.300, -23.46, 157.10 | .00000 |
| 75.600, -28.10, -20.10, -4.140, -61.26 | .00000 |

Direct Iteration
Number of decimal places = 6

| Iter. | Eigenvector | Alpha |
|---|---|---|
| 1 | -.323855, -.833602, .9391491, 1.000000, -.407108, | -185.700 |
| 100 | -.303409, -.861028, .9355975, 1.000000, -.308025, | 7.061830 |
| 199 | -.305309, -.859435, .9394785, 1.000000, -.317859, | 7.840126 |
| 298 | -.305282, -.859457, .9394247, 1.000000, -.317723, | 7.828178 |

Eigenvalue of largest modulus is 7.828371
Found in 347 iterations.
Corresponding eigenvector
(-.305283, -.859457, .9394256, 1.000000, -.317725)
**********

Are you sure you are looking at the same eigenvalue now?

Change in element $a_{1,3}$ | Change in eigenvalue of largest modulus

-0.05 | -0.59127

-0.01 | -0.12307

If the element $a_{1,3}$ is changed by +0.05, the eigenvalue of largest modulus is now 7.828371 ie the eigenvalue -8.16627 has changed by at least

Change of +15

Ignore this part

For this case, the eigenvalue of largest modulus changes by a factor greater than ten the change in element $a_{1,3}$, so the largest eigenvalue is absolutely ill conditioned wrt small changes in value of element $a_{1,3}$.

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