

Console

A=

$$\begin{pmatrix} 2. & -1. & 0. \\ -1. & 2. & -1. \\ 0. & -1. & 2. \end{pmatrix}$$

V=

$$\begin{pmatrix} 2. & -1. \\ -1. & 2. \end{pmatrix}$$
$$3 - 4x + x^2$$

=0

a(1) = 3.000000

a(2) = 1.000000

a = 3.000000

R=

$$\begin{pmatrix} -1.4142136 & -1.4142136 & -0.7071068 \\ 0 & -0.7071068 & -1.2071068 \\ 0 & -0.7071068 & -0.2071068 \end{pmatrix}$$

Q=

$$\begin{pmatrix} 0.7071068 & -0.5 & 0.5 \\ 0.7071068 & 0.5 & -0.5 \\ 0 & 0.7071068 & 0.7071068 \end{pmatrix}$$

Q*R=

$$\begin{pmatrix} -1. & -1. & -2.776D-17 \\ -1. & -1. & -1. \\ 0 & -1. & -1. \end{pmatrix}$$

A=

$$\begin{pmatrix} -2. & -0.5 & -0.5 \\ -0.5 & -1.2071068 & -0.5 \\ -0.5 & -0.5 & 0.2071068 \end{pmatrix}$$

V=

$$\begin{aligned} & - 2. \quad - 0.5 \\ & - 0.5 \quad - 1.2071068 \end{aligned}$$

$$2.1642136 + 3.2071068x + x^2$$

$$=0$$

$$a(1) = -2.241652$$

$$a(2) = -0.965455$$

$$a = -2.241652$$

$$R=$$

$$\begin{aligned} & 0.6918317 \quad - 0.0498204 \quad - 2.1035448 \\ & - 0.1228971 \quad 0.5448562 \quad - 1.1560306 \\ & 0.2542852 \quad - 1.1273569 \quad 0.8573868 \end{aligned}$$

$$Q=$$

$$\begin{aligned} & 0.1893532 \quad 0.6401609 \quad 0.7445397 \\ & - 0.3917889 \quad 0.7445397 \quad - 0.5405201 \\ & - 0.9003593 \quad - 0.1893532 \quad 0.3917889 \end{aligned}$$

$$Q^*R=$$

$$\begin{aligned} & 0.2416521 \quad - 0.5 \quad - 0.5 \\ & - 0.5 \quad 1.0345453 \quad - 0.5 \\ & - 0.5 \quad - 0.5 \quad 2.4487588 \end{aligned}$$

$$A=$$

$$\begin{aligned} & 2.0444657 \quad 0.8041033 \quad - 0.2821205 \\ & 0.8041033 \quad 0.5458913 \quad - 0.8389275 \\ & - 0.2821205 \quad - 0.8389275 \quad 1.1345992 \end{aligned}$$

$$V=$$

$$\begin{aligned} & 2.0444657 \quad 0.8041033 \\ & 0.8041033 \quad 0.5458913 \end{aligned}$$

$$0.4694740 - 2.590357x + x^2$$

$$=0$$

$$a(1) = 2.394275$$

$$a(2) = 0.196082$$

$$a = 2.394275$$

R=

- 0.5054649 2.0956801 1.3019977
- 0.3182754 0.2530995 - 0.7751655
- 0.7012466 0.5576464 - 0.2722046

Q=

0.3105154 0.9385074 - 0.1509440
- 0.7137785 0.1253362 - 0.6890654
- 0.6277742 0.3217060 0.7088052

Q*R=

- 0.3498094 0.8041033 - 0.2821205
0.8041033 - 1.8483838 - 0.8389275
- 0.2821205 - 0.8389275 - 1.259676

A=

- 2.4701667 0.2071425 - 0.4449009
0.2071425 - 0.5163567 - 0.6758016
- 0.4449009 - 0.6758016 - 0.4713459

V=

- 2.4701667 0.2071425
0.2071425 - 0.5163567

$$1.232579 + 2.9865233x + x^2$$

=0

$$a(1) = -2.491886$$

$$a(2) = -0.494637$$

$$a = -2.491886$$

R=

0.4545276 0.7718551 - 2.0531726
- 0.0603118 - 0.6314976 0.5523719
0.1763058 1.8460184 - 0.4653992

Q=

0.0050849 - 0.9747238 - 0.2233554
0.0484954 - 0.2228551 0.9736446

- 0.9988105 - 0.0157826 0.0461364

Q*R=

0.0217198 0.2071425 - 0.4449009
0.2071425 1.9755297 - 0.6758016
- 0.4449009 - 0.6758016 2.0205405

A=

2.0904729 - 0.5826462 0.5552654
- 0.5826462 0.1908019 - 0.5758988
0.5552654 - 0.5758988 1.7365152

V=

2.0904729 - 0.5826462
- 0.5826462 0.1908019

0.0593896 - 2.2812748x + x²

=0

a(1) = 2.254937

a(2) = 0.026338

a = 2.254937

R=

0.3604684 - 1.1612968 - 0.6116401
0.1983772 0.5087035 - 0.6010379
0.7110231 1.823294 0.4164018

Q=

0.0771491 - 0.9969895 0.0077436
0.2733152 0.0136792 - 0.9618273
0.9588257 0.0763205 0.2735477

Q*R=

- 0.1644643 - 0.5826462 0.5552654
- 0.5826462 - 2.0641353 - 0.5758988
0.5552654 - 0.5758988 - 0.518422

A=

- 0.8760465 - 0.4219496 0.9524455

$$\begin{aligned} & - 0.4219496 - 0.2366928 - 0.6521613 \\ & 0.9524455 - 0.6521613 - 1.6342823 \end{aligned}$$

$$V =$$

$$\begin{aligned} & - 0.2366928 - 0.6521613 \\ & - 0.6521613 - 1.6342823 \end{aligned}$$

$$- 0.0384915 + 1.8709751x^2 + x$$

$$= 0$$

$$a(1) = -1.891327$$

$$a(2) = 0.020352$$

$$l1 =$$

$$2.9156739$$

$$l2 =$$

$$1.0243472$$

$$l3 =$$

$$2.9360255$$

Note : Values of V varies in each step resulting in different results due to error in bo
lation