**hw5\_q3.m output:**

ans =

1.0000 -4.0000 4.0000 -0.0000

T =

1 0 1

0 1 -1

1 1 2

invT =

1.5000 0.5000 -0.5000

-0.5000 0.5000 0.5000

-0.5000 -0.5000 0.5000

This matrix is inv(T) \* A \* T

diagMatrix =

2 0 0

0 2 0

0 0 0

**hw5\_q4.m output:**

First Matrix (Given in #4):

A =

4 -6 7

2 0 5

-10 2 5

characteristic\_poly =

1.0000 -9.0000 92.0000 -348.0000

paA =

1.0e-12 \*

0.4547 -0.3411 0.3411

0.4547 -0.3411 0.1705

-0.3411 -0.2842 0.3411

Second Matrix (Given in #3):

A =

3 1 -1

-1 1 1

2 2 0

characteristic\_poly =

1.0000 -4.0000 4.0000 -0.0000

paA =

1.0e-15 \*

0.8882 0 0

0 0.8882 0

0 0 0.8882

Third Matrix (My choice):

A =

1 2 3

4 5 6

7 8 9

characteristic\_poly =

1.0000 -15.0000 -18.0000 -0.0000

paA =

1.0e-13 \*

0.1046 -0.1421 -0.2132

-0.2842 -0.1086 -0.4263

-0.5684 -0.5684 -0.3928