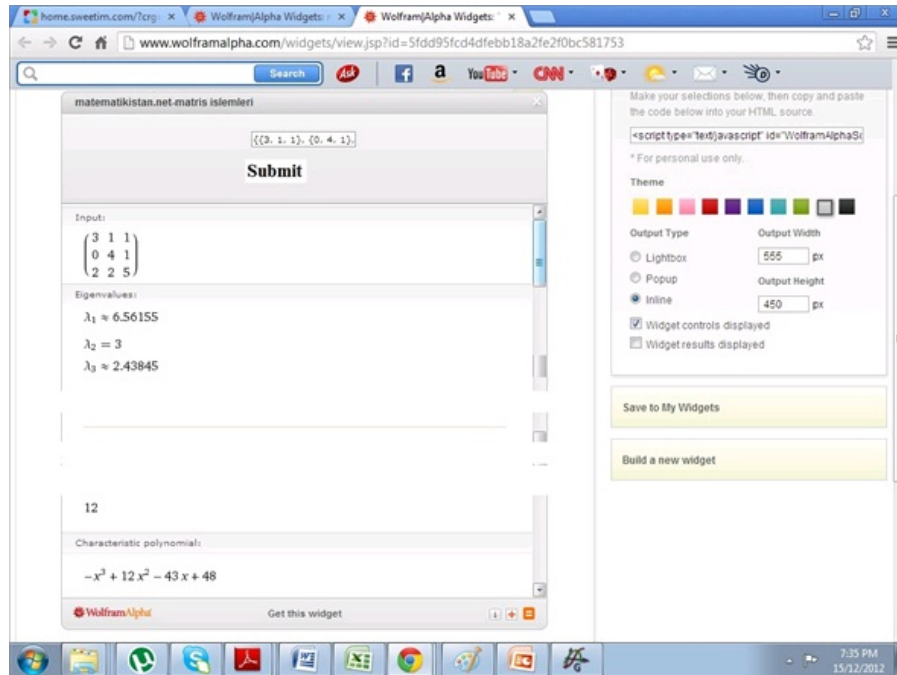# Step-1

Consider the matrix:

$$A = \begin{bmatrix} 3 & 1 & 1 \\ 0 & 4 & 1 \\ 2 & 2 & 5 \end{bmatrix}$$

By using matrix calculator (the screenshot is given below), the eigenvalues of A are given by,

Step-2

The circles that bound the Eigenvalues are C_1, C_2, and C_3.

The center of C_1 is at the point (3, 0).

The radius of C_1 is given by,

$$r_i = |1| + |1|$$
$$= 2$$

The center of C_2 is at the point (4, 0).

1

The radius of C_2 is given by,

$$r_2 = |0| + |1|$$
$$= 1$$

The center of C_3 is at the point $(5, 0)$.

The radius of C_3 is given by,

$$r_3 = |2| + |2|$$
$$= 4$$

Step-3

The graph of circles C_1, C_2, and C_3 is given below.
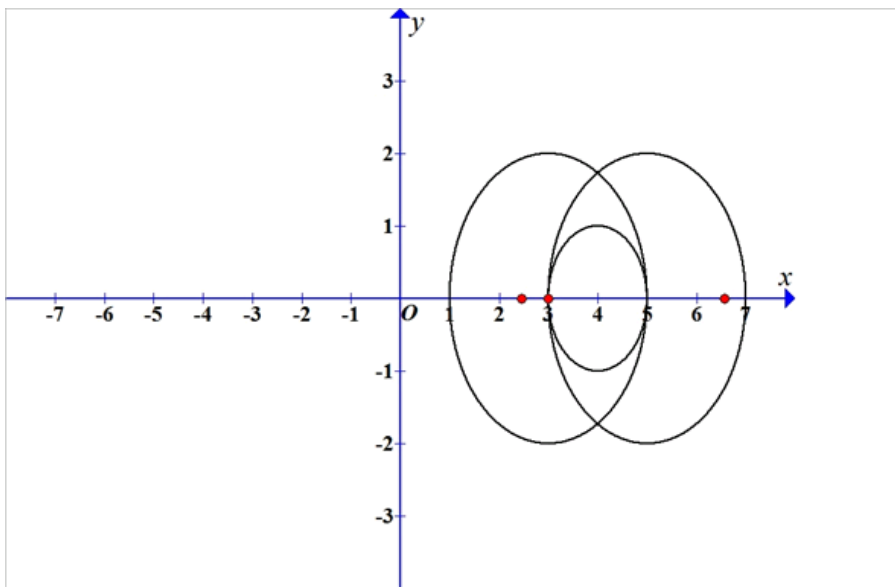
Step-4

Thus, the origin does not lie any in of the circles.