Mini report #2 (Advanced Automation) 2016.12.**9(modified)**

Student #: _____   Name: _____

[**NOTICE**]

- write by hand

- due date: 2016/12/14 17:00; place of submission: room 405(1   )

- check if your answer is correct or not before submission by using Matlab

Let M be a matrix given as:
$$M = \begin{bmatrix} \frac{j}{4} & \sqrt{2} \\ \frac{1}{2} & 0 \end{bmatrix}.$$

Answer the followings:

(1) Show that $\bar{\sigma}(M) \geq 1$.

(2) Find a positive real number $d > 0$ such that $\bar{\sigma}\left(W^{-1}MW\right) < 1$, where $W = \begin{bmatrix} d & 0 \\ 0 & 1 \end{bmatrix}.$