

# Mini report #1 (Advanced Automation) 2019.10.31

Student #: \_\_\_\_\_ Name: \_\_\_\_\_

## [NOTICE]

- write by hand
  - due date: 2019/11/6 17:00; place of submission: room 405(機械建設 1 号棟 小林)
  - check if your answer is correct before submission by using MATLAB
  - don't answer in approximated values (write  $\sqrt{2}$  instead of 1.4142 , for example)
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Let  $M$  be a matrix given as:

$$M = \begin{bmatrix} \frac{1}{\sqrt{2}} & j \\ \frac{1}{\sqrt{2}} & -j \end{bmatrix}.$$

Answer the followings:

(1)  $\bar{M}$

(2)  $M^*$

(3)  $M^*M$

(4)  $\lambda_i(M^*M)$

(5)  $\sigma_i(M)$

(6)  $\bar{\sigma}(M)$