

Lecture 5 Problems

S.1

(9):

$$P = \begin{bmatrix} 0 & 0 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix}$$

(10): Let

$$\hat{P} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}, \text{ then } \hat{P}^3 = I \text{ and thus } \hat{P}^4 \neq I.$$

5.2

(a): 10

(b): 6

5.3

(a): True

(b): True

(c): False