EE 105 Feedback Control Systems
Department of Electrical and Computer Engineering
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Homework #11

Name: *Shang Wang*   Student ID: *1277417*   E-mail: *shang.wang@tufts.edu*

1 Problem 1

1.1 Part A

The state equation and the output equation:

$$\dot{x}_1 = -5x_1 - 4x_3 + u$$
$$\dot{x}_2 = x_1$$
$$\dot{x}_3 = x_2$$
$$y = 100x_3$$

So the control matrices are:

$$A = \begin{bmatrix} -5 & -4 & 0 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix},$$