Assignment # 3

For each of the unit step response shown in figure (P4.9) in your text book page 237:

1. Mathematically, find the transfer function of each system.
2. Using matlab, obtain the step response to ensure your analysis for each system.
3. Using matlab, obtain settling time, rise time, peak time, percent overshoot for each.
4. Using matlab, obtain damping ratio and natural frequency for each.
5. Using matlab, plot the zero–pole map for the third system, and obtain mathematically from it damping ratio and natural frequency.
6. Using Simulink, obtain the step response for the second system.
7. It will be recommended, if you give me your comment about systems.

Hint: in our lab, we discuss and obtained more matlab commands that help you and summarize your solution way, so try to use it.

*May Allah Lead You to All Success!*