Answers to ES205 Examination III, 1996-1997

Problem 1
1.1  d
1.2  c
1.3  \( \ddot{x} + 3\dot{x} + 4x = F + F \)
1.4  b
1.5  a
1.6  a
1.7  \( \delta \approx 1.39 \)
1.8  \( \zeta \approx 0.22 \)
1.9  \( \omega_n \approx 1.61 \)
1.10  c

Problem 2
Answer not available

Problem 3
Be sure to put transfer function in form found in the table. The "-10" you will have in front has a magnitude of 10 (=20dB) and a phase of 180 degrees.

Problem 4
Done as an in-class example. One possible answer is \( k = 4310 \) N-m, \( c = 607 \) N-m-s.