EE 475 Fall 2011 Quiz #7

Name:_____

1. For an under-damped prototype 2nd order system with damping ratio ζ and un-damped natural frequency ω_n, answer the following question.

   1) What is the damping factor σ:_____.

   2) What is the damped oscillation frequency ω_d:_____.

   3) What is a good range of ζ:_____.

   4) For $\zeta = 0.6$ estimate the overshoot:_____.

   5) For $\pm 2\%$ tolerance, give a formula for settling time: _____.

   6) Give the expression for the pole: _____.

   7) Give an expression for estimating rise time:_____.

   8) Give an expression for estimating delay time:_____.

   9) Give the exact expression for peak time:_____.

   10) Give the exact expression for overshoot:_____.