EENG307: Intro to Feedback Control

Fall 2020

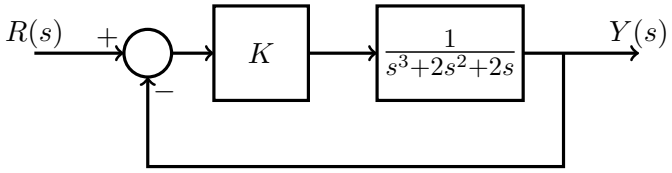
Homework Assignment #7

Quiz #5

Quiz Question Monday: Consider the following unity gain feedback system. By varying K, what is the smallest possible steady state error ($e(\infty) = r(\infty) - y(\infty)$) for

1. A unit step reference command $r(t) = u(t)$.
2. A unit ramp reference command $r(t) = tu(t)$.

Remember that the closed loop must be stable to have finite steady state error.



Which of the following is the correct answer for question 2?

(a) $e_{ss} = k/2$

(b) $e_{ss} = 1$

(c) $e_{ss} = 0$

(d) $e_{ss} = \infty$

(e) $e_{ss} = 1/2$