Control Oral 2005 January.

Cruise (velocity) control of a car
Mass: 1000 Kg.
Viscous Damper: 600 N/m/sec
Possible sources of disturbance: wind, slope of the road

Design Specification
Maximum overshoot < 20 %
Steady state error < 2 %
Rising time < 10 sec

Controller
1. P controller
2. I controller
3. PI controller

Question:
1. Transient response of each controller
2. Which controller can meet the specification?
3. Discuss the each controller.
4. In the transfer function, which one is the most probably not correct?
5. What is the advantage of the PI controller over the P controller?
6. In PI controller, what if the zero is in between the two poles?