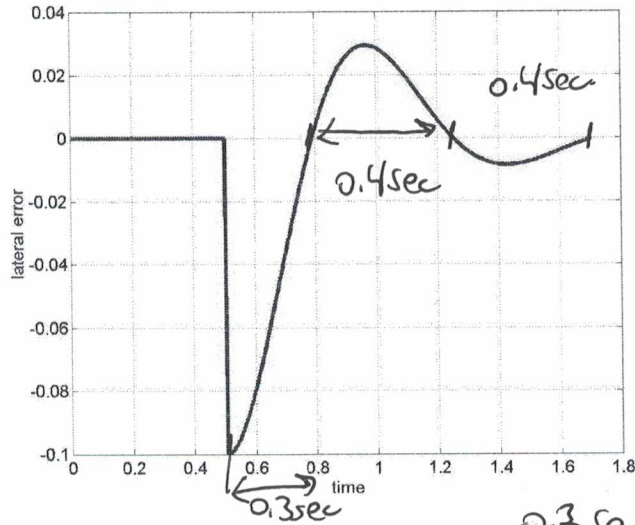


Solution 4/22/2019.

EE192 Steer Control Practice Problem



Measured step response (as function of time) on a 10 cm step at 2 m/sec using P+D controller is given as shown above.

$0.3 \text{ sec} \times 2 \text{ m/sec} = 0.6 \text{ m.}$   
 $0.4 \text{ sec} \times 2 \text{ m/sec} = 0.8 \text{ m}$

Note per cent overshoot is 30%, and it takes  $0.\frac{4}{3}$  sec after crossing the line to recross.   
step

For initial car position as shown on path, car speed 2 m/sec, sketch lateral error  $y_a$  as function of longitudinal **distance**. Numbers are path length in m (min radius turn).

