

CE 361  
In-Class Design Problem #8:  
Traffic Signal Queuing

Name \_\_\_\_\_

An approach to a signalized intersection has a saturation flow rate of 1800 veh/h. At the beginning of an effective red, there are 6 vehicles in queue and vehicles arrive at 900 veh/h. The signal has a 60-second cycle. The approach is allocated 35 seconds of green time and 4 seconds of yellow. All red time is 2 seconds.

- a) Using typical values for start-up lost time and clearance lost times, what is the total vehicle delay after one cycle? (assume  $D/D/1$  queuing).
- b) How much total green time ( $G$ ) would have to be allocated to the approach to ensure that there are no vehicles in the queue at the end of the cycle and what would the total delay be after one cycle in this case? (assume  $D/D/1$  queuing).