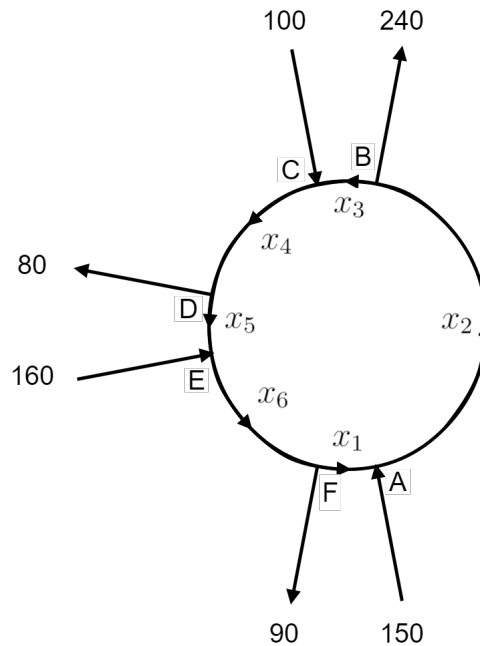


Lab 7 Assignment

Due on 06/19th at 6pm on Blackboard.

Traffic circles are used to maintain smooth traffic flow without using traffic lights that cause stop and go movement. They are rare in the United States, but are more common in Europe. Consider the traffic circle below, where the arrows indicate the direction in which cars move, and the numbers are the traffic flow along the segment in vehicles per hour (vph). We wish to find the traffic flow in all unknown segments.



- (1) Using conservation of traffic, set up the equations that model this system. Write this in the form $Ax = b$.
- (2) Use `csolvefull` to find the complete solution to this system.
- (3) What is the minimum traffic flow along each segment?
- (4) It takes vehicles 5 minutes to cross segment DE . Also, segment DE can accommodate up to 80 vehicles. Any more than this, and there will be congestion due to a traffic bottleneck. What is the maximum traffic flow along each segment allowed to avoid congestion?

Show all work. This assignment is to be completed by hand on paper. Turn in this hand written work. The only part that needs a computer is using `csolvefull` to find the complete solution. Record the result of `csolvefull` on the hand written work. Do not turn in the work on the computer or the code for `csolvefull`.