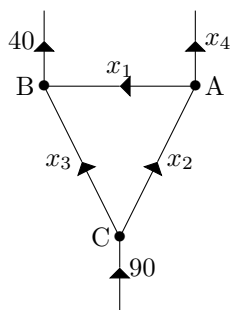


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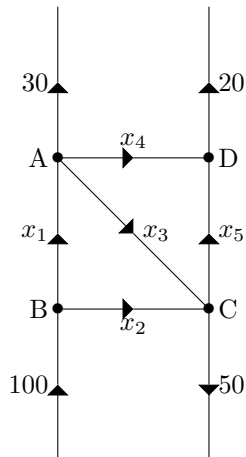
Network Flow Exercises

Professor: Alistair Savage

QUESTION 1. Find the general flow pattern of the network shown in the figure below. If you assume that all the flows are nonnegative, what is the largest possible value for  $x_3$ ?



QUESTION 2. Consider the street network shown below. Flow rates are in cars per minute.



- Find the general traffic pattern in the network.
- Describe the general traffic pattern when the road whose flow is  $x_4$  is closed.
- When this road is closed, what is the maximum value of  $x_3$ ?

QUESTION 3. For the network shown below, what are the minimum values of  $x_2$ ,  $x_3$ ,  $x_4$ , and  $x_5$ ?

