Last name _____

First name _____

LARSON—MATH 356—CLASSROOM WORKSHEET 23
Network Flows

Review

- What is a *directed graph*?
- What is the notation to represent the *initial* and *terminal* vertices of a directed edge?
- What is a *source* and *sink* in a directed graph?
- What is a *capacity* of an edge in a directed graph?
- What is a *network* **X**?
- What is a *flow* in a network?

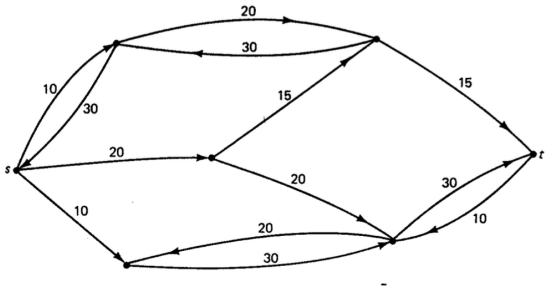

Fig. 3.1.1: A network

1. Why does *some* flow in a network always exist?

2. What is the *value* of a flow in a network?

3. Why does a *maximum* flow in a network *exist*?

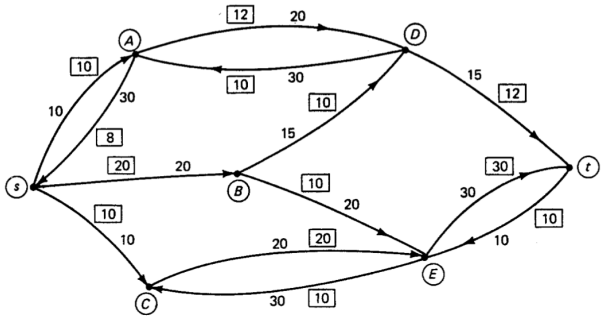

Fig. 3.1.2: A flow in a network

4. Check that the indicated flow is *valid*.

5. Can this flow be improved? (Can you find a flow with a larger value)?

6. Given a path P from s to t in X, when is an edge of P *coherent* (and when is it *incoherent*) with respect to P?

7. What is a *flow augmenting path*?

8. How can you find a flow augmenting path?