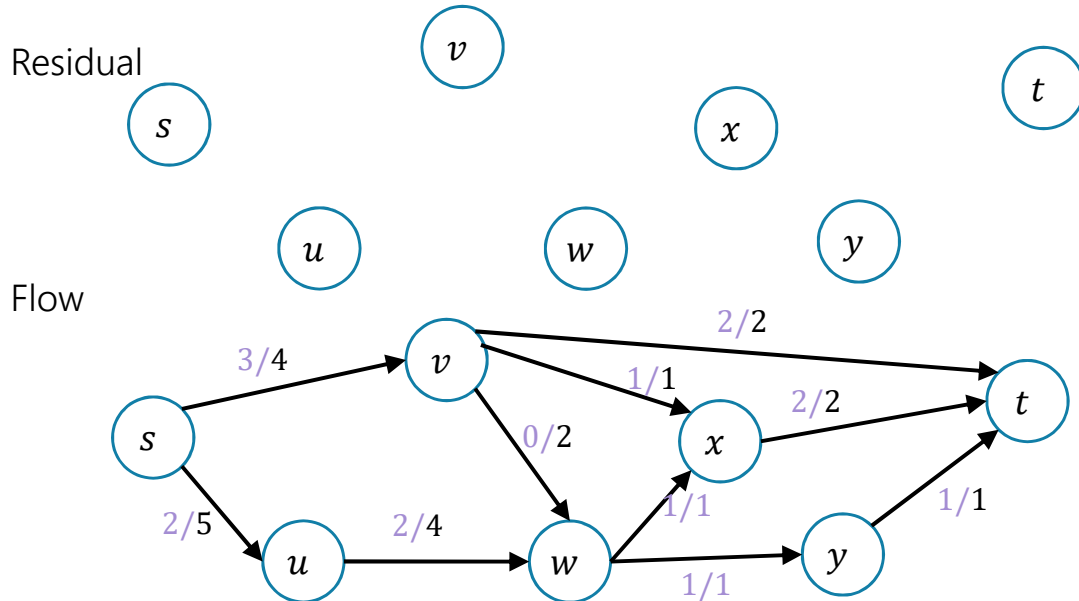


Another Example



Some notation (more formally)

Let f be a flow.

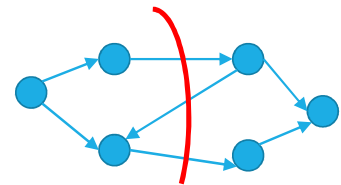
For an edge e , $f(e)$ is the flow on e .

$\text{val}(f)$ is the sum of flow leaving s (equivalently entering t).

For a cut (A, B) , $\text{cap}(A, B) = \sum_{e: e=(u,v), u \in A, v \in B} c(e)$
 i.e., the sum of the capacities on edges going from A to B .

Direction matters!

Notice the capacity of a cut is independent of any particular flow. It's a property of the **original** graph, not the flow or the residual graph.



Example Problem

You and your housemates need to decide who is going to do each of the chores this week.

Some of your housemates are unable to do some chores.

Housemates: 1,2,3

Chores:

Arrange furniture, clean the **Bathroom**, Cook dinner, do the **Dishes**

Housemate 1 is unable to arrange furniture, 2 is unable to cook.

Another Problem

You run two coffee shops. You have to decide who will work at which of your shops today:

A, B, C are all capable of managing a shop.

D, E, F, G are all regular employees (can't be a manager)

You need at least one manager at each shop, at least 3 people (total) at shop 1 and at least 4 people (total) at shop 2.

Hint: think of assigning managers and non-managers as separate...