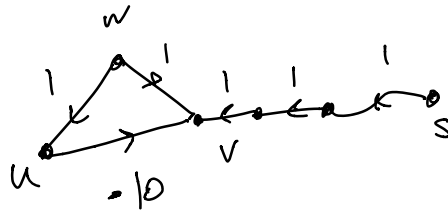


• v $OPT(v)$?

$$\min_{u \rightarrow v} OPT(u) + c_{uv}$$



$OPT(v, 3)$ • update from $OPT(u, 2) = \infty$

$OPT(u, 6)$ • is update from $OPT(u, 5)$

Flow value Lem: For any s-t cut A ,

$$\sum_{e \text{ leaving } A} f(e) - \sum_{e \text{ coming to } A} f(e) = v(f)$$

Pf.

$$v(f) = \sum_{e \text{ leaving } S} f(e)$$

$$= \sum_{v \in A} \sum_{e \text{ leaving } v} f(e) - \sum_{e \text{ coming to } v} f(e)$$

$$= \sum_{e \text{ leaving } A} f(e) - \sum_{e \text{ coming to } A} f(e)$$

