\[ V(s) = \sum_{j \in \text{new}} (T_j - \min c_{ij}) \]

We show:

If provider i "drops out of the game" then the change in \( V(s) \) is exactly i's profit.

Change of strategy:
- drop out
- reenter with different strategy

Consider a client j currently served by i at \( c_{ij} \).
If i "drops out" then j will be served by 2nd cheapest provider i' at \( c_{ij'} \). This is exactly the price \( p_{ij} \) that i charged for the service.

\( \Rightarrow \) Change in \( V(s) \) w.r.t. j is \( p_{ij} - c_{ij} \) and exactly i's profit.
Thm 4.12

- (iii) is satisfied by definition

- Equality in (iii) was shown in Thm 4.10.

- To see (i), observe that adding a new facility decreases the the cost of serving some clients.
  This decrease can only be smaller w.r.t. a superset of the facilities.

- Adding a facility cannot increase cost for clients
  \[ \Rightarrow \] monotone