

# Assignment 4A

4.22

Port Cities  $V: [ \quad ]$

Visit city  $i$  earns  $P_i$  dollars

Transportation Cost  $C_{ij} > 0$

cyclic

$G = (V, E)$

$V = \text{city}$

$E = \text{path route}$

$C = \text{cycle}$

profit to cost ratio

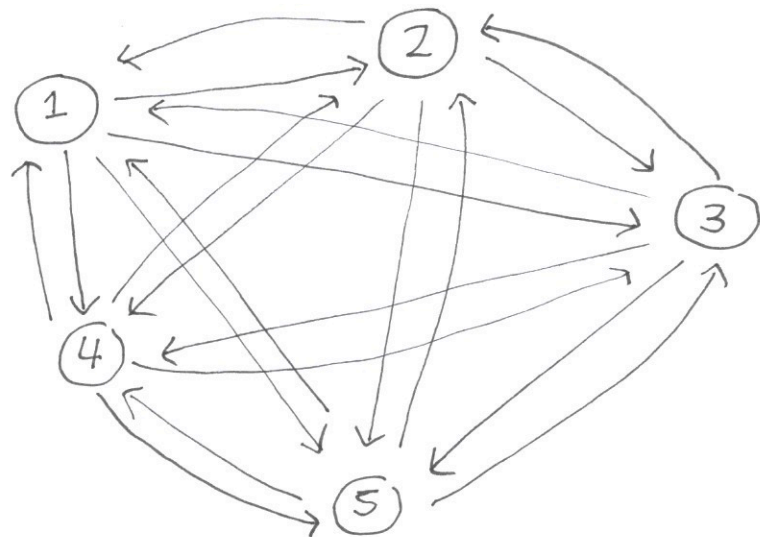
$$r(C) = \frac{\sum_{(i,j) \in C} P_j}{\sum_{(i,j) \in C} C_{ij}}$$

$(i, j)$

$$W_{ij} = rC_{ij} - P_j$$



B



- Is a cycle composed of the whole graph or can it be a subset of graph  $G$ ?
- Why is it  $P_j$  not  $P_{ij}$ ?
- How does the binary search of maximum value of  $r$  work?
- In  $rC_{ij} - P_j$  why do we only take the ratio of  $C_{ij}$  not  $P_j$ ?
- Can a cycle take any route as long as it ends up at beginning?