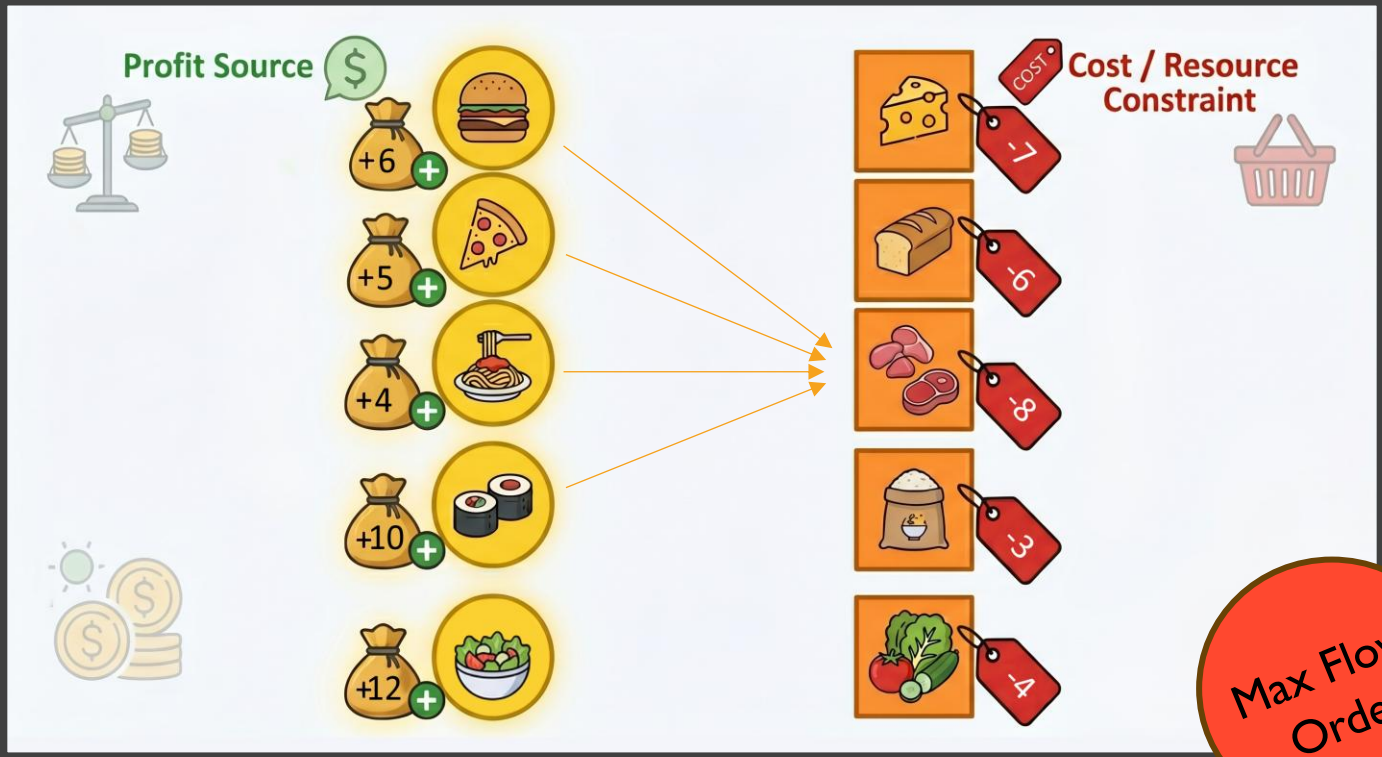


# MAXIMIZING MENU PROFIT

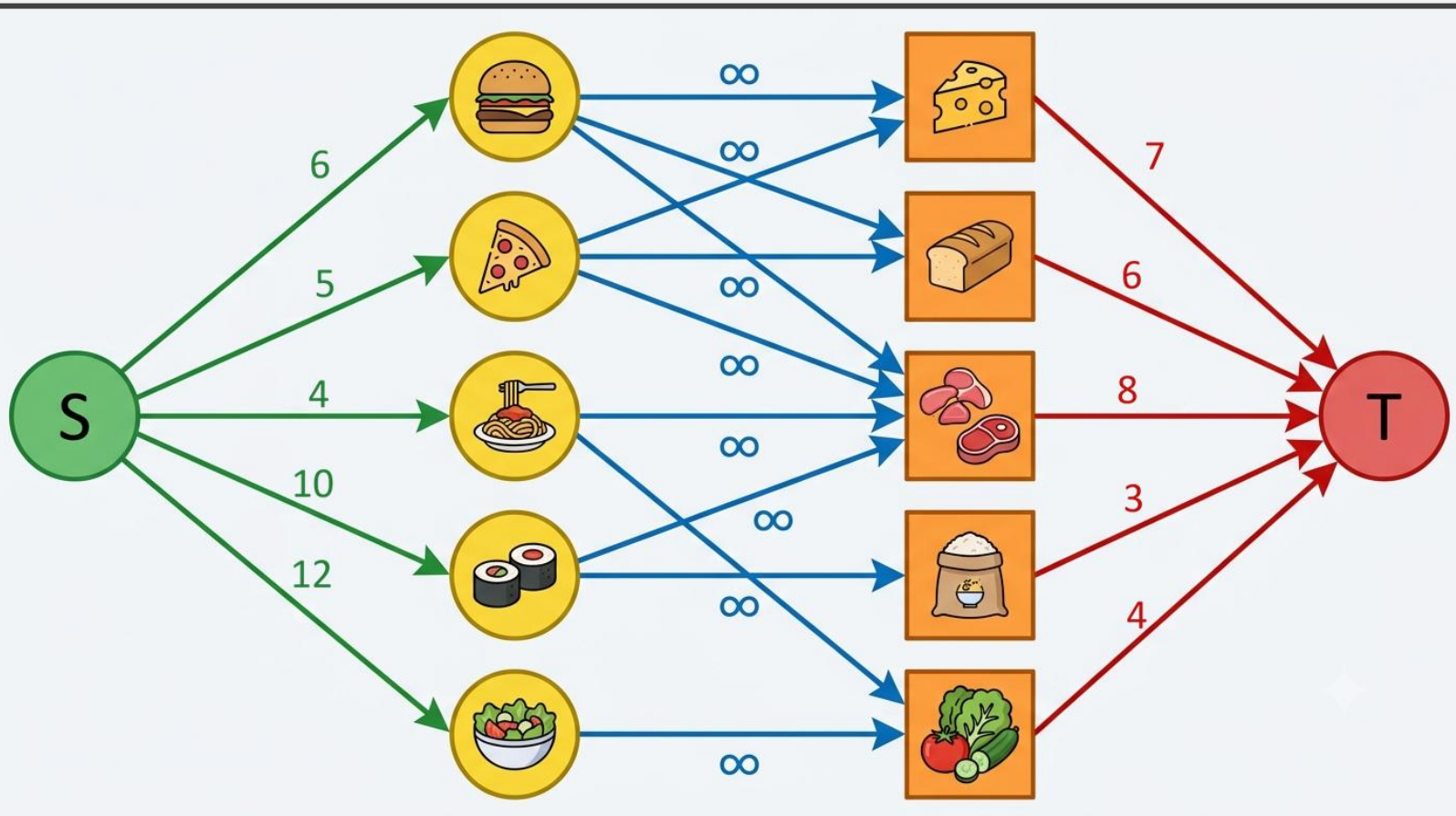
Narges Kari 402110821

# PROBLEM

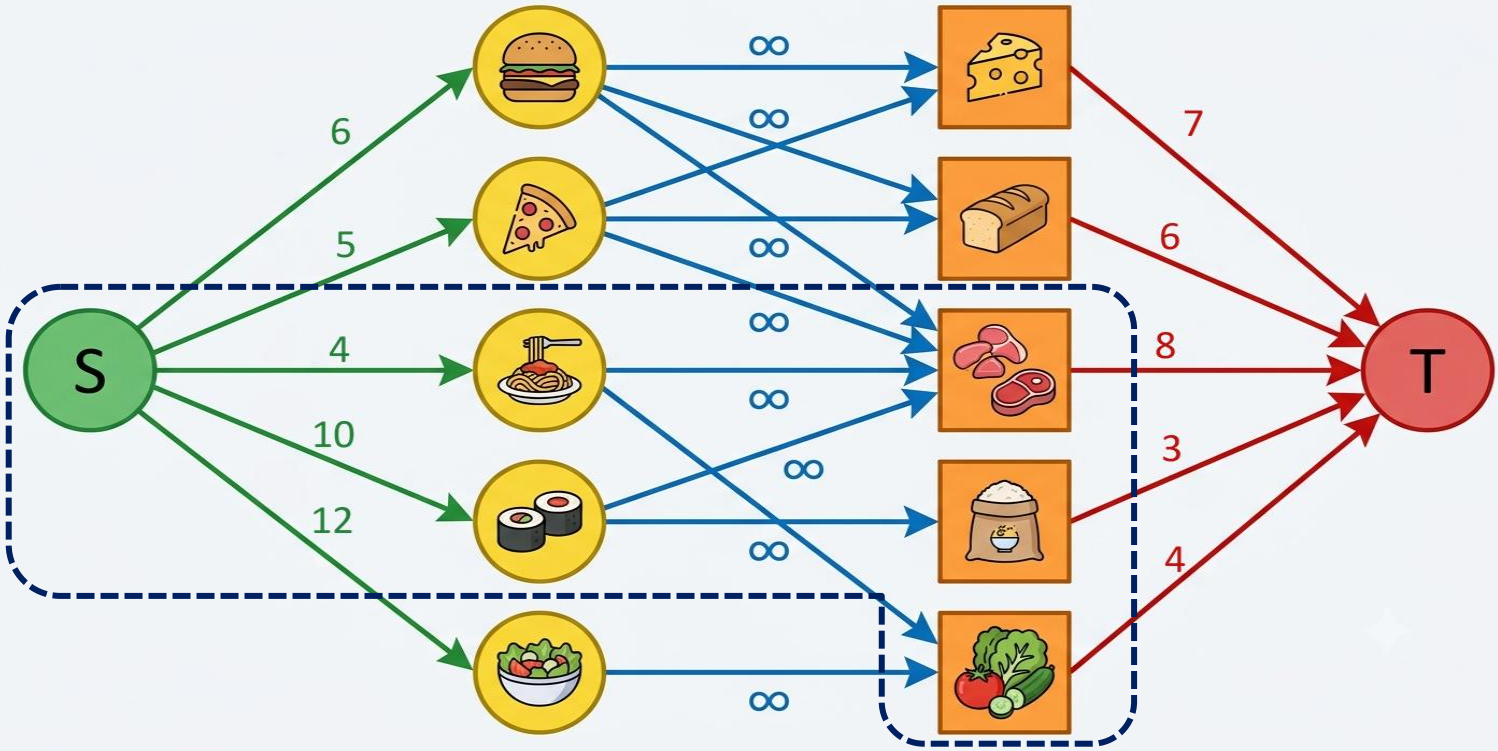


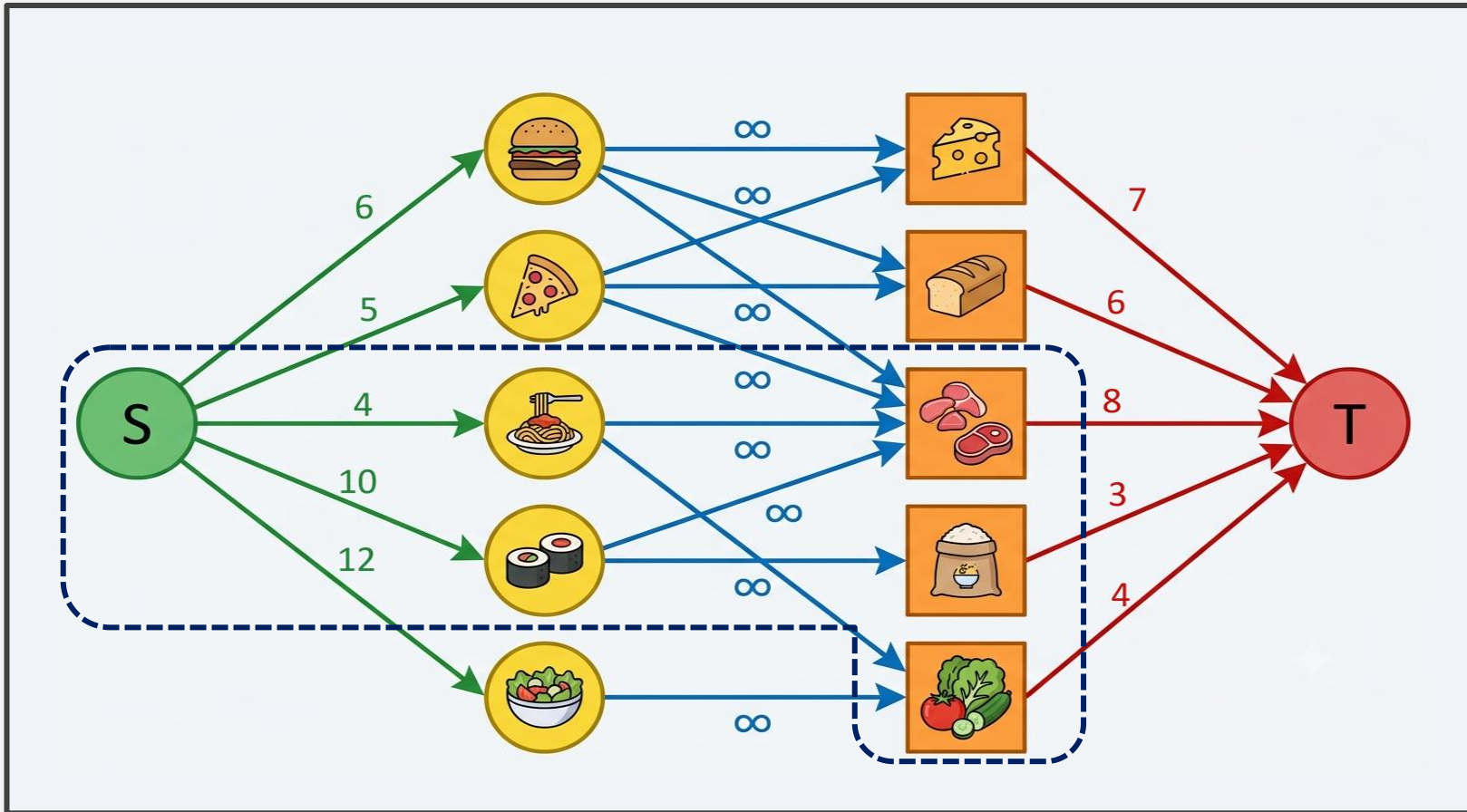
$$\text{Maximize } \sum_{i \in \text{Selected}} A_i - \sum_{j \in \text{Selected}} B_j$$

# THE FLOW NETWORK MODEL



# OBSERVATION



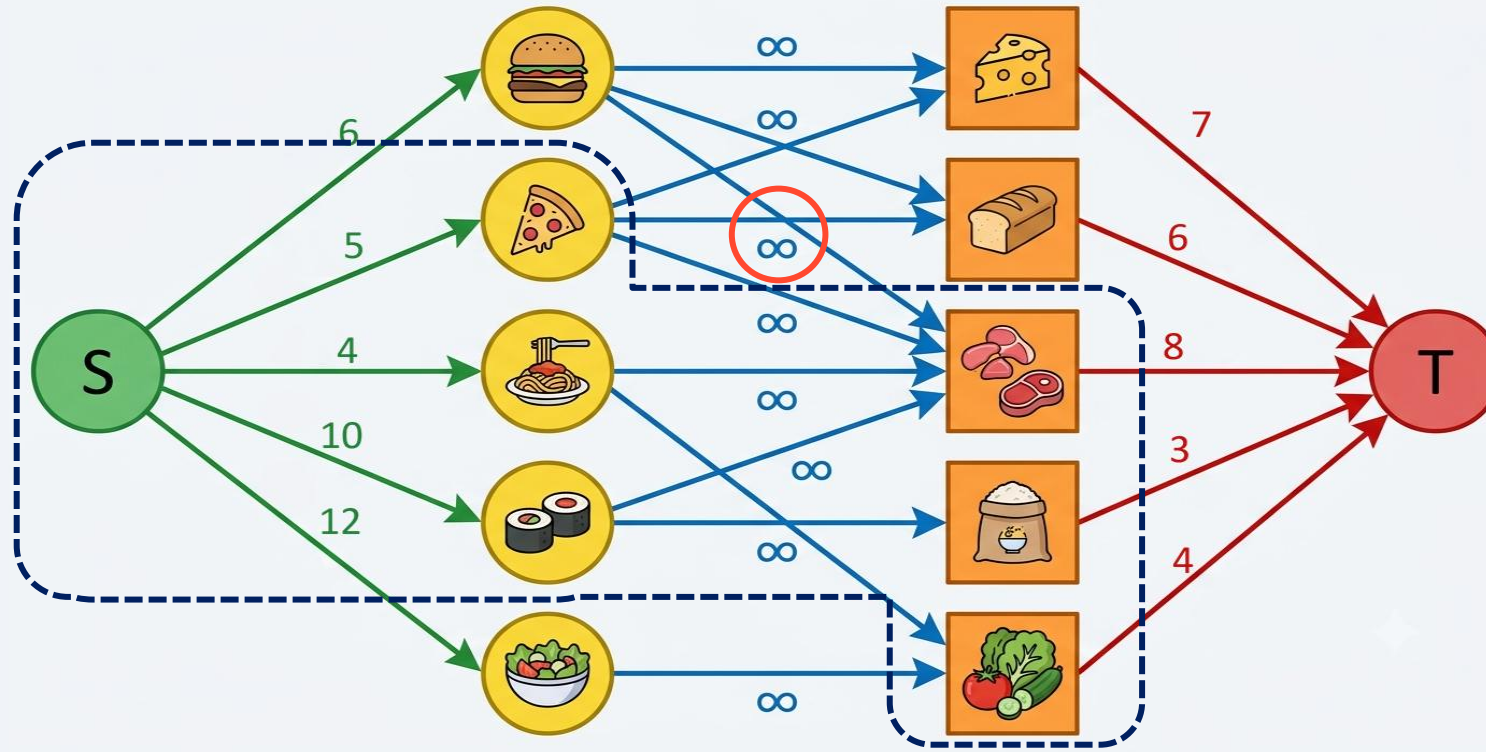


$$\sum_{i \in \text{Selected}} A_i - \sum_{j \in \text{Selected}} B_j = (\sum_i A_i - \sum_{i \notin \text{Selected}} A_i) - \sum_{j \in \text{Selected}} B_j$$

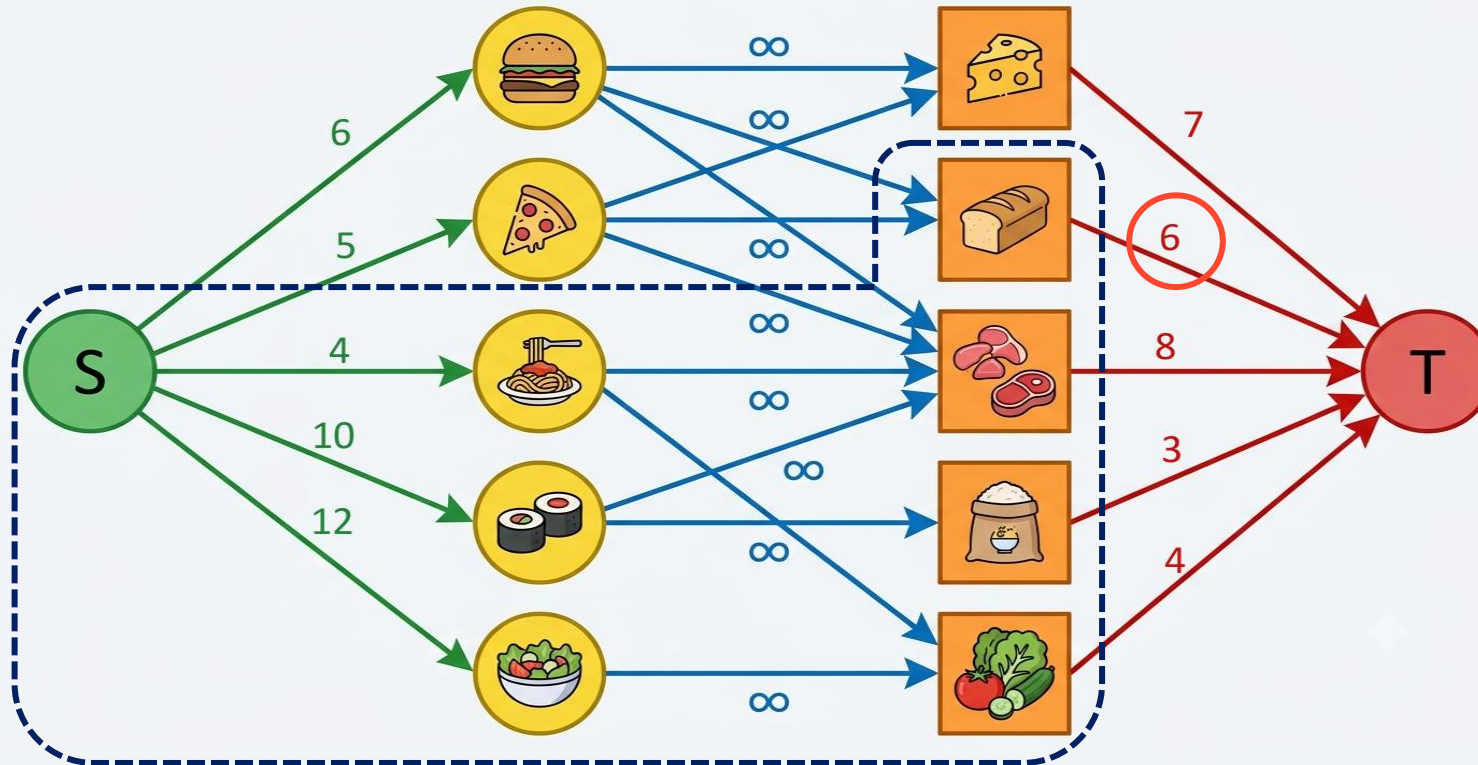
$$= \sum_i A_i - CAP$$

$$(4+10) - (8+3+4) = -1 = (6+5+4+10+12) - (6+5+12) - (8+3+4) = 37 - (6+5+12+8+3+4)$$

# I) FOOD WITHOUT INGREDIENT?

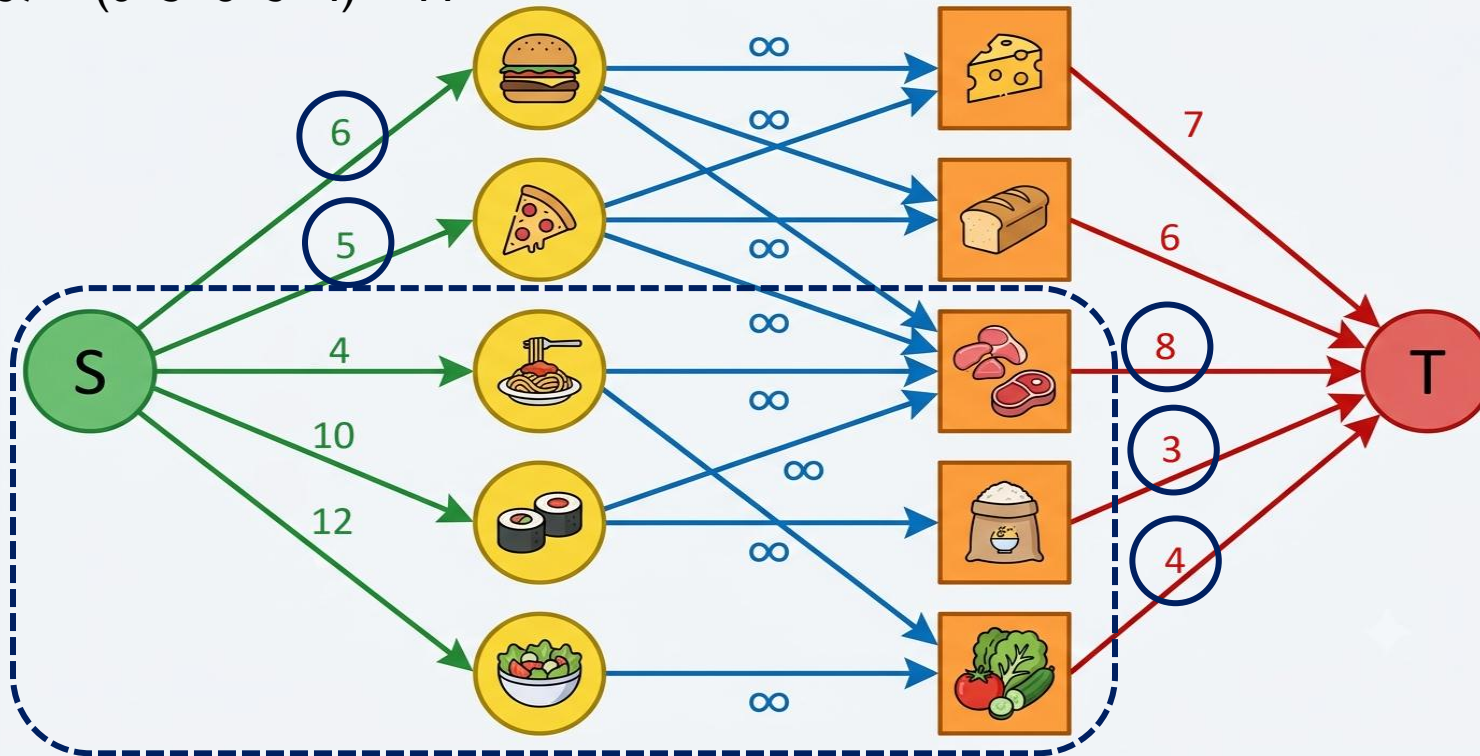


## 2) INGREDIENT WITHOUT FOOD?



# MIN CUT

$$37 - (6+5+8+3+4) = 11$$



THE END