

w m

$$\min \left(\prod_{i=1}^m w_i \right)$$

$$\Leftrightarrow \min \left(\log \left(\prod_{i=1}^m w_i \right) \right)$$

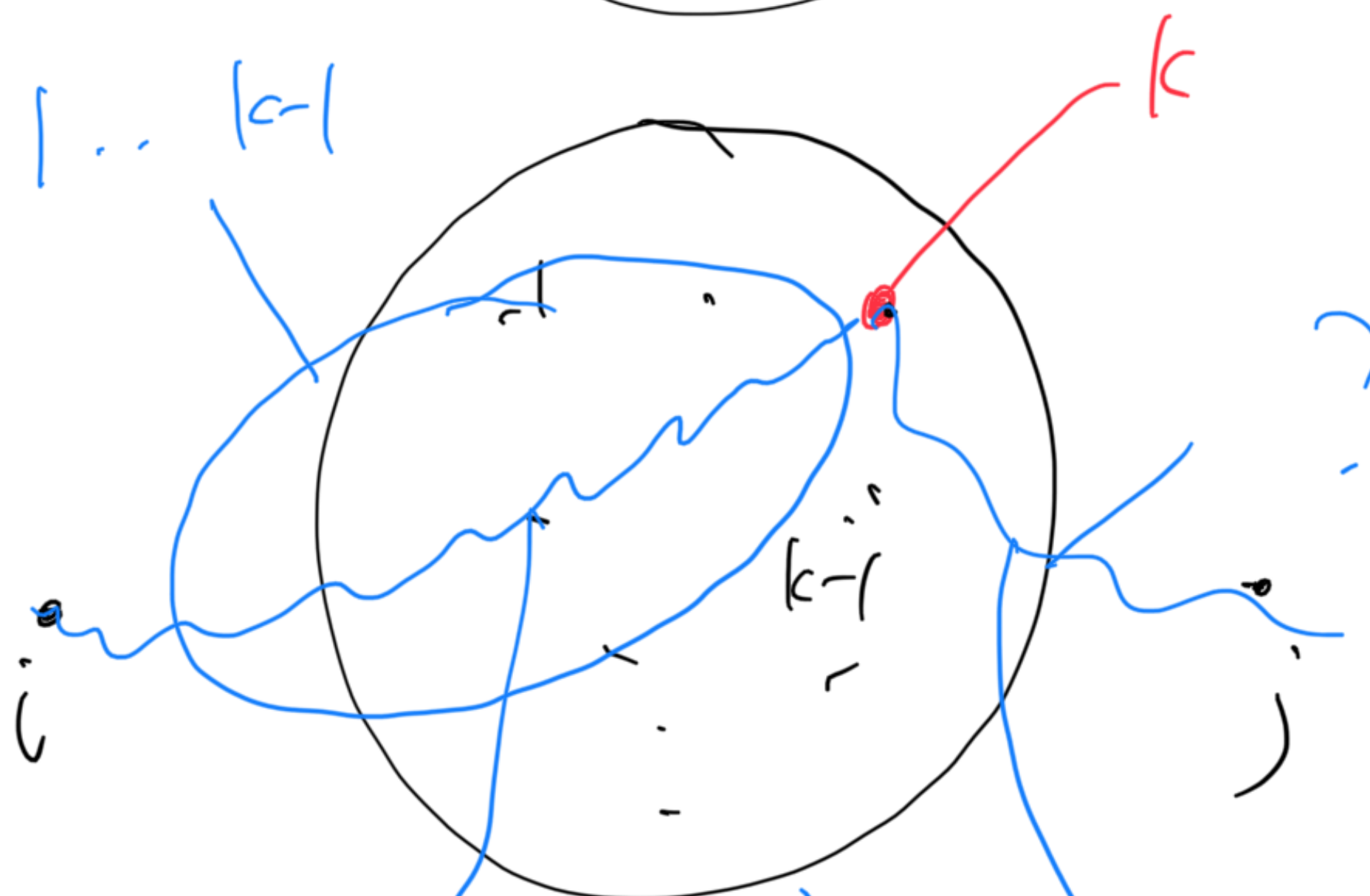
$$\min \left(\sum_{i=1}^m \log w_i \right)$$

$$w_i' = \log w_i$$

$$\rightarrow \left(\sum_{i=1}^m w_i' \right)$$



$$d_{ij}^{(k)}$$



$$\underbrace{d_{ik}^{(k-1)} + d_{kj}^{(k-1)}} > d_{ij}^{(k-1)}$$