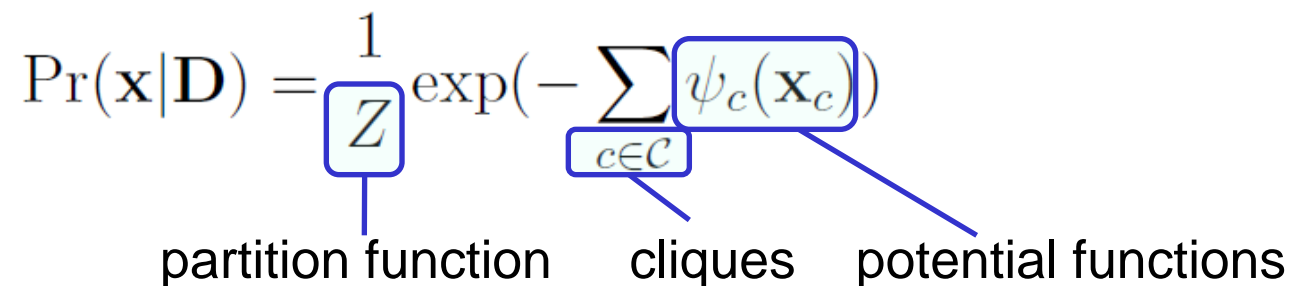


- Markov / Conditional Random fields model conditional dependencies between random variables
- Each variable is conditionally independent of all other variables given its neighbours
- Posterior probability of the labelling \mathbf{x} given data D is :

$$\Pr(\mathbf{x}|\mathbf{D}) = \frac{1}{Z} \exp\left(-\sum_{c \in \mathcal{C}} \psi_c(\mathbf{x}_c)\right)$$

partition function cliques potential functions



- Energy of the labelling is defined as :

$$E(\mathbf{x}) = -\log \Pr(\mathbf{x}|\mathbf{D}) - \log Z = \sum_{c \in \mathcal{C}} \psi_c(\mathbf{x}_c)$$