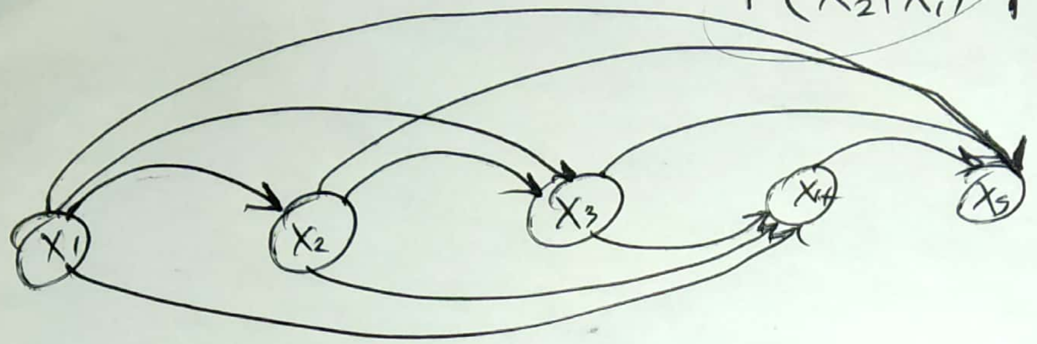
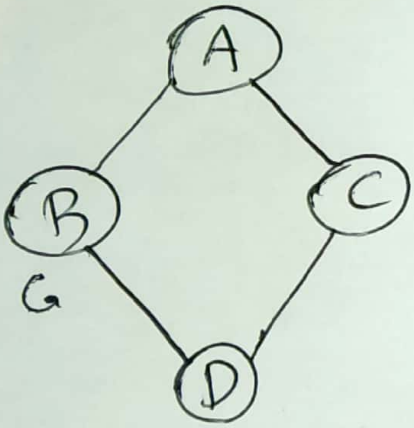
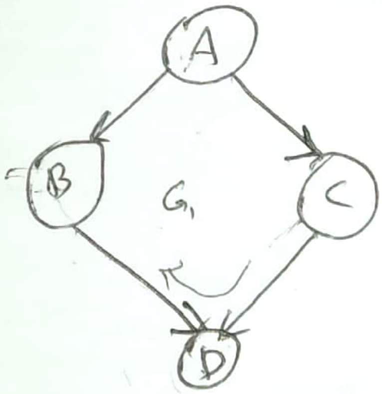
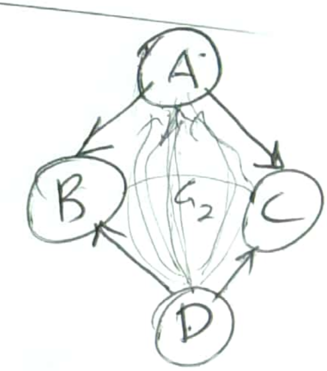
$$P(X_1, X_2, \dots, X_n) = P(X_n \mid X_1 - X_{n-1})\, P(X_{n-1} \mid X_1 - X_{n-2}) \cdots P(X_2 \mid X_1)\, P(X_1)$$



$$P(X_1 - X_n) = \frac{1}{Z} \Phi(X_1 - X_n)$$



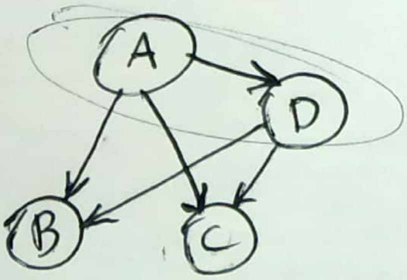


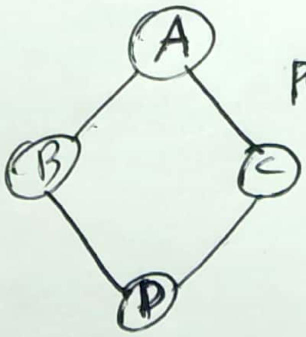


$I(G) = \{ B \perp C \mid A, D,\ A \perp D \mid B, C \}$

$I(G_1) = \{ A \perp D \mid B, C,\ C \perp B \mid A \}$

$I(G_2) = \{ (B \perp C \mid D, A),\ (A \perp D) \}$





$$P(A, B, C, D) = \frac{1}{Z} \Phi_1(A,B)\, \Phi_2(A,C)\, \Phi_3(B,D)\, \Phi_4(C,D)$$

$$q = P(X_{t+1} = 1 \mid X_t = 0) = P(X_2 = 1 \mid X_0 = 0) = P(X_{20} = 1 \mid X_{19} = 0)$$

$$p = P(X_{t+1} = 0 \mid X_t = 1)$$

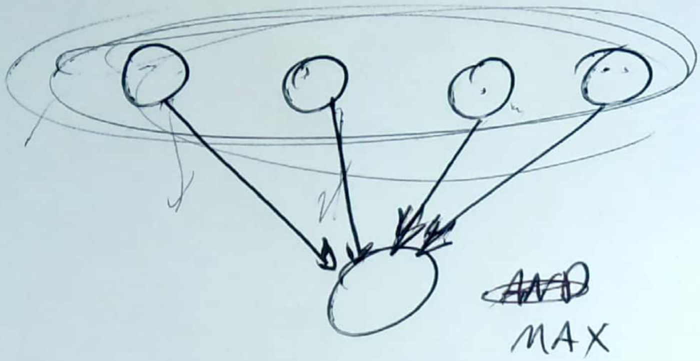
$$P(X \mid Y, Z) = P(X \mid Z)$$

$P(X \mid Y, Z) = P(X \mid Z)$ conditional independence

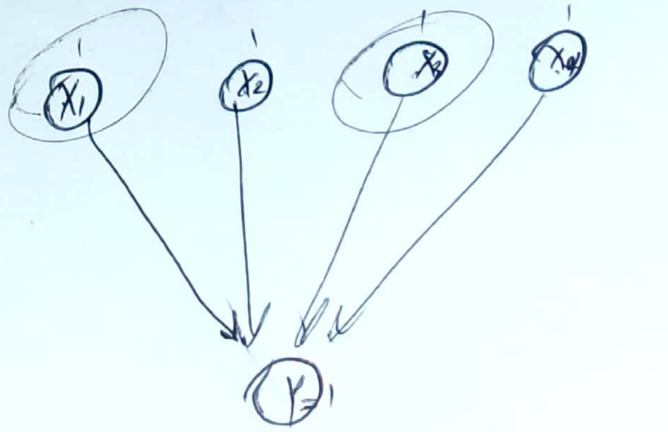
context-specific

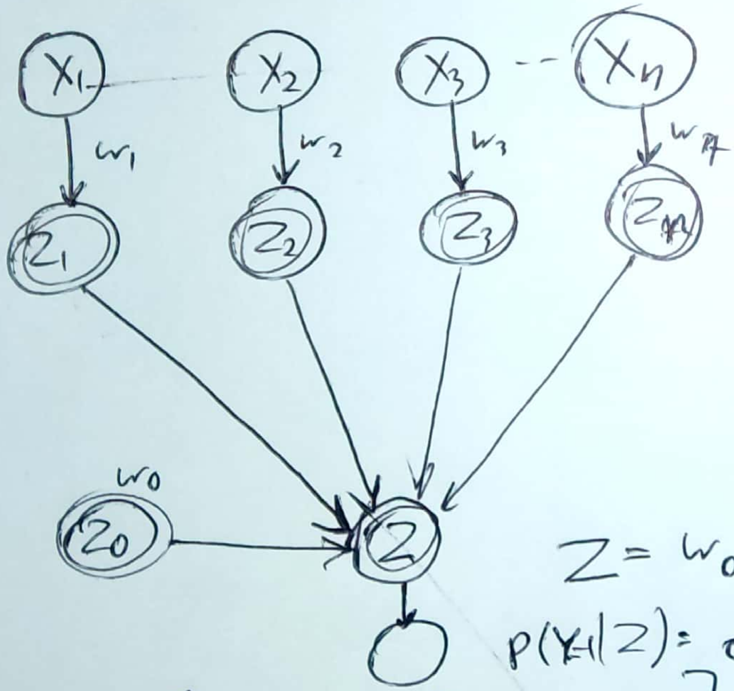
$P(X \mid Y, Z=0) \neq P(X \mid Z=0)$

$P(X \mid Y, Z=1) = P(X \mid Z=1)$



~~AND~~ MAX





$Z_i = w_i X_i$

$\sigma(z) = \frac{1}{1+e^{-z}}$

$Z = w_0 + \sum_{i=1}^{n} w_i X_i$

$P(Y=1 \mid Z) = \sigma(Z)$

$Z \in [w_0, w_0 + w_1 + \dots + w_n]$