$$\alpha_1 = P(Z_1)P(X_1|Z_1)$$
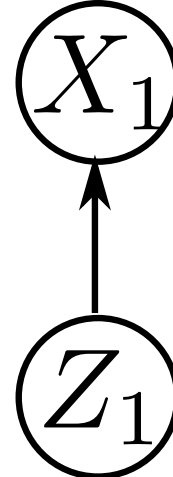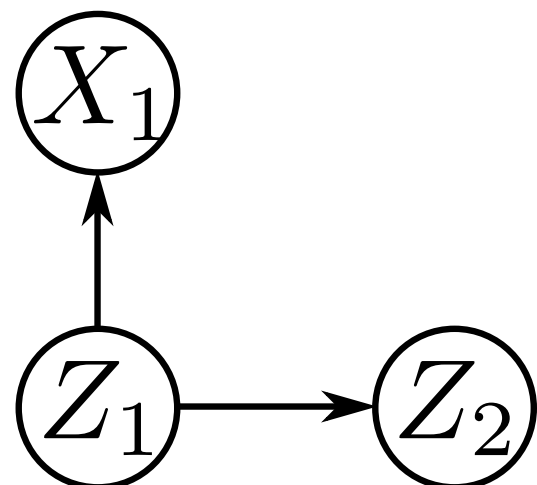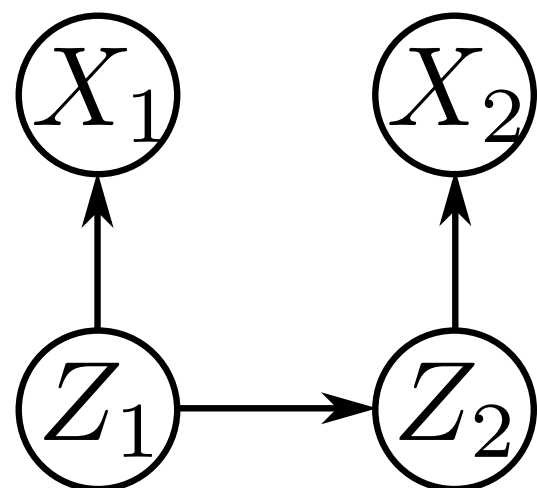
$$\alpha_1 P(Z_2|Z_1)$$

$$\alpha_1 P(Z_2|Z_1)P(X_2|Z_2)$$

$$\alpha_2 = \sum_s \left[\alpha_1(s)P(Z_2|s)\right]P(X_2|Z_2)$$