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$$H(Y) + H(X,Y,Z) - H(X,Y) - H(Y,Z) = \sum_{x,y,z} p(x,y,z) \log \left(p(x,y)p(y,z)/p(y)p(x,y,z) \right) \tag{1}$$

$$\leq \frac{1}{\ln 2} \sum_{x,y,z} p(x,y,z) \left[1 - p(x,y)p(y,z)/p(y)p(x,y,z) \right] \tag{2}$$

$$= \frac{1-1}{\ln 2} = 0 \tag{3}$$

The equality occurs if and only if $p(x,y)p(y,z)/p(y)p(x,y,z) = 1$, which means a Markov chain condition of $Z \to Y \to X$,which is $p(x|y) = p(x|y,z)$

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