

- Evidently,

$$\# \text{ of dots} \leq \# \text{ of cells}$$

- Therefore,

$$2^{nH(X,Y)} \leq 2^{nH(X)} 2^{nH(Y)}.$$

- Taking logarithm and dividing by n , we have

$$H(X,Y) \leq H(X) + H(Y)$$

or

$$I(X;Y) \geq 0.$$