Entropy

Def

Entropy is defined as follows.

=

=

Property

Continuity

Entropy function should always be continuous.

Symmetric

Entropy is symmetric. That is,

=

Maximum

The equally outcome should result in maximal value of entropy. That is,

Increasing number of outcomes

For all equiprobable events, more events we have, more entropy we get. That is,

times times

Additivity

For postive integer such that and

We always have that:

=+

Adding or removing probability with zero

Adding or removing probability with zero will NOT change the value. That is,

=

Entropy with conditional function

=

=

=

since it is symmetric (in property section.) (I.e. = )

Entropy with continous function or for continuous random variable

See Entropy for continuous random variables section in Wiki (given below).



Ref

[Entropy (information theory) - Wikipedia](https://en.wikipedia.org/wiki/Entropy_(information_theory))