

Combinations

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The number of combinations of size k from a set of size n is given by the binomial coefficient $\binom{n}{k} = n! \operatorname{div} k! \operatorname{div} (n - k)!$. A recursive definition of $\binom{n}{k}$ may be stated thus:

$$\left[\binom{n}{k} \doteq \text{if } k = 0 \text{ then } 1 \text{ else } \binom{n-1}{k-1} \cdot n \operatorname{div} k \right]$$

As an example, we have $\left[\binom{4}{2} = 6 \right]$. For details on how the binomial coefficient is rendered, see [1].

References

- [1] A. U. Thor. Combinations - appendix. Technical report, Logiweb, 2006. <http://logiweb.eu/logiweb/server/relay/64/BAuxeMT9zfewFOafdsWUpvzkj99Ky3a1JDN0sigBB/2/body/tex/appendix.pdf>.