# A PROPERTY OF THE EXPONENTIAL DISTRIBUTION

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The partial summation

$$\mathrm{P}_x = c \sum_{j=x}^{\infty} \mathrm{P}_j^*, \quad \text{x=0,1,2, } \dots \tag{1}$$

($c$ being a proper constant) was introduced in [1] and generalized in [2]. In [4] there are many pairs of the parent and descendant distributions (i.e. the distributions $\{P_j^*\}_{j=0}^{\infty}$ and $\{P_j\}_{j=0}^{\infty}$, respectively) belonging to the generalized hypergeometric family (see [3]). According to [5] the necessary and sufficient condition for the parent and descendant distributions to be identical under the summation (1) is to be the geometric distribution.

The analogy of (1) for continuous distributions, namely the transformation of the probability density functions

$$\text{f(x)=k} \int_x^{\infty} f^*(t)dt \tag{2}$$

($k$ being a proper constant, $f^*(x)$ and $f(x)$ the probability density functions of the parent and descendant distributions, respectively) is presented. The exponential distribution remains unaltered under the transformation (2).

## REFERENCES

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