

Inverse Trinomial Distribution: Properties and Generalizations

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The inverse trinomial distribution has been derived as a one-dimensional random walk distribution by Shimizu and Yanagimoto (1991). This presentation considers various formulations, in particular a mixed Poisson formulation, and probabilistic properties like unimodality and discrete self-decomposability of the inverse trinomial distribution. Generalizations of the inverse trinomial distribution through a planar random walk is presented, and the properties and applications of one of the generalizations, capable of modelling different levels of dispersion, is discussed.