



Transformations of the simplest nonsymmetric random walks and some applications of the invariance principle

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We derive convenient formulas for the distribution tails of the supremum of the simplest nonsymmetric random walks defined on a finite time-interval. Using these formulas, we obtain a new representation for the distribution of the number of crossing a canonical strip by the random walk.

As a consequence of the above-mentioned results, we propose a new approach to calculate the distributions of some boundary functionals of a Brownian motion with drift.