CORR 2002-26

A Rotation Bijection for Lattice Paths above a Line of Integer Slope

I.P. Goulden & Luis G. Serano

Abstract We provide a direct geometric bijection for the number of lattice paths that never go below the line $y = kx$ for a positive integer $k$. This solution to the Generalized Ballot Problem is in the spirit of the reflection principle for the Ballot Problem (the case $k = 1$), but it uses rotation instead of reflection.