

Title: Equal values of standard counting polynomials

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The following discrete geometrical question provides a background for some classical diophantine problems. For given positive integers m, n , can an m -dimensional and an n -dimensional unit cube, simplex, pyramid or octahedron contain equally many integral points? Apart from some trivial cases, the question leads to 9 families of diophantine equations, see Table 1. In this paper we give a brief survey of known results on these equations, and prove some new theorems concerning the solutions.

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