Title: Equal values of standard counting polynomials

Author(s): Kálmán Győry, Tünde Kovács, Gyöngyvér Péter and Ákos Pintér

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.

Address:
Kálmán Győry
Institute of Mathematics
University of Debrecen
H-4010 Debrecen, P.O. Box 12
Hungary

Address:
Tünde Kovács
Institute of Mathematics
University of Debrecen
H-4010 Debrecen, P.O. Box 12
Hungary

Address:
Gyöngyvér Péter
Institute of Mathematics
University of Debrecen
H-4010 Debrecen, P.O. Box 12
Hungary

Address:
Ákos Pintér
Institute of Mathematics
MTA-DE Research Group
"Equations Functions and Curves"
Hungarian Academy of Sciences
and University of Debrecen
H-4010 Debrecen, P.O. Box 12
Hungary