International J. of Math. Sci. & Engg. Appls. (IJMSEA)
ISSN 0973-9424, Vol. 7 No. VI (November, 2013), pp. 81-84

INTEGRAL POINTS ON THE BIQUADRATIC EQUATION WITH THREE UNKNOWNS $(x+y+z)^3 = z^2(3xy - x^2 - y^2)$

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Abstract

We obtain infinitely many non-zero integer triples (x, y, z) satisfying the biquadratic equation with three unknowns $(x+y+z)^3 = z^2(3xy - x^2 - y^2)$. Various interesting properties between the values of x, y, z and special number patterns, namely, polygonal numbers, pyramidal and centered pyramidal numbers are presented.

Key Words : *Biquadratic equation with five unknowns, Integral solutions, polygonal numbers, Centered pyramidal numbers.*

2000 AMS Subject Classification : 11D25.