OBSERVATIONS ON THE HOMOGENOURS TERNARY QUADRATIC DIOPHANTINE EQUATION $39(X^2 + y^2) - 72Xy = 246z^2$

Dr. A. Vijayasankar[1], Sharadha Kumar[2], & Dr. M. A. Gopalan[3]

[1]*Assistant Professor, Department of Mathematics, National College, Affiliated to Bharathidasan University, Trichy, Tamil Nadu, India*

[2]*Research Scholar, Department of Mathematics, National College, Affiliated to Bharathidasan University ,Trichy, Tamil Nadu, India*

[3]*Professor, Department of Mathematics, Shrimati Indira Gandhi College, Affiliated to Bharathidasan University, Trichy, Tamil Nadu, India*

ABSTRACT

The homogeneous ternary quadratic equation given by $39(x^2 + y^2) - 72xy = 246z^2$ is analysed for its non-zero distinct integer solutions through different methods. Also, formulae for generating sequence of integer solutions based on the given solution are presented.

KEYWORDS: *Ternary Quadratic, Homogeneous Quadratic, Integer Solutions*