Completing Polynomials of n-th Order, Super Conic Sections and New Geometric Shapes

Abu Mahfouz, Ala'a

In this paper we will introduce a new study of a new family of polynomials and geometric shapes that are related. An extension of completing the square (second order) to nth order polynomial is given (completing polynomials). The required conditions to achieve this completing are proved. Furthermore, a wide study of a new and old shapes and a generalization of the mathematical and physical properties of conic section (second order) will be considered also in two dimensional and three dimensional shapes. A closed form equations will describe our two dimensional new shapes that are called as super conic sections which include super double parabola and super hyperbola.

Awards Won: