

Exploring Rose Curves with the TI-Nspire Calculator

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Workshop Proposal for the TI-Nspire & Derive Strand

ABSTRACT

This workshop will utilize the TI-Nspire calculator to gain an understanding for the role of the values of a and n in the equation $r = a\sin(n)$. It will demonstrate how to provide students an opportunity to explore changing the values and their impact upon the curve. By examining the changes that occur students will be able to predict the number of petals and their length by examining the polar equation. This will enable students to explore and understand the relationship between the equation of a rose curve and the equation of a sinusoidal function. By using sliders to observe the effect of changing the values of a and n students will learn to generalize the roles of a and n in the polar equation. This is accomplished by grabbing a point and dragging it along a sinusoidal function. As the point is dragged, the corresponding polar equation will be formed. This allows students to compare the equations of the function and the rose curve and make generalizations about the relationship between the two equations. We will also discuss the impact of having students write equations of rose curves when given information about the petals of the curve.

Keywords

Exploring with TI-Nspire, Rose Curves, Trigonometric translations.