

3.5 Technology: TI-83 Plus Calculator: Graphing Functions and Inverse Functions

Specific Expectations

The following expectation is common to the Functions and Relations course and the Functions course.

- OC2.04 explain the relationship between a function and its inverse (i.e., symmetry of their graphs in the line $y = x$; the interchange of x and y in the equation of the function; the interchanges of the domain and range), using examples drawn from linear and quadratic

functions, and from the functions $f(x) = \sqrt{x}$ and $f(x) = \frac{1}{x}$

Evidence of Learning

Students should be able to

- use technology to show the relation between a function and its inverse
- discuss the characteristics of a particular function using the appropriate vocabulary — domain, range, symmetry, and inverse

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Time Required Functions and Relations or Functions: 50 min

Materials and Equipment

- TI-83 Plus calculator

Overview

- Use two methods, one of which is using parametric equations, to graph inverse functions.
- Using parametric equations might be used for enrichment, but is not required for grade 11 courses. However, using parametric functions allow students to visualize the inverse of any function simply.

Management Options

Pairs – Arrange students in pairs and provide sufficient time for them to work through the instructions in the text. Encourage them to ask questions. Provide students with sample questions for them to try when they feel comfortable with the methods.

Teacher Demonstration – Provide each student with a TI-83 Plus, if the resources are available, and invite them to work through several examples following the steps in the methods. Use the view screen.

TECHNOLOGY SUGGESTION

Place posters indicating keystroke sequences on the classroom's walls for future reference.