Activity Plan Template: What the i?

Andrew Elmer

October 13, 2014

Topic: Complex Numbers

Connection to Core Curriculum: Secondary Mathematics II -> N.CN.1 Know there is a complex number i such that i^2 = -1, and every complex number has the form a + bi with a and b real.

Overview: Students will experiment with explore how different values in cartesian coordinates are transformed into complex numbers. There are also options to add and subtract complex numbers.

Objectives: Students will learn how to add and subtract complex numbers.

Materials Needed: Computer for each participant

Technology: Complex number graphing applet.

Role of Technology: The technology graphs the complex numbers for the students to help students see how complex numbers are manipulated using algebra.

Web Reference: http://www.maa.org/publications/periodicals/loci/resources/an-interactive-introduction-to-complex-numbers-basic-calculations-applet

Activity Plan: 1. Review the form for a complex number: a+bi.
2. Show students how to plot points using the applet. 'a' is the real component and 'b' is the imagainary portion of any complex nummber. After 'a' and 'b' have been entered then click 'Set z1 cart.' Plot a couple points using cartesian coordinates to demonstrate how to use the applet.
3. Show students how to use the applet to add and subtract complex numbers.
4. Pass out task sheet which will lead students through addition and subtraction of complex numbers.
5. Review conjectures with the whole class and decide on one as a class. (It would be helpful to look at students' papers to see who should contribute because they probably won't volunteer.)

Included documents: See attached Task Sheet labeled "Complex Numbers Task Sheet"

References: Siebel, Dr. Jens. *An Introduction to Complex Numbers.* Applet retrieved from http://www.maa.org/publications/periodicals/loci/resources/an-interactive-introduction-to-complex-numbers-basic-calculations-applet.