

Uses of Java Applets in Mathematics Education

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Abstract

This paper illustrates different ways in which Java applets can enhance on-line lessons. We discuss and give instances of the following uses of applets:

Applets to generate examples. Instead of a single image with a picture that gives an example of the concept being taught an applet allows us to have very many examples without the need for a lot of space.

Applets that give students simple exercises to make sure that they have understood a definition or concept.

Applets that generate data. The students can then analyze the data and try to make reasonable conjectures based on the data.

Applets that guide a student through a sequence of steps that the student performs while the applet is running.

Applets that present “picture proofs”. With animation it is possible to present picture proofs that one could not do without a computer.

An applet can set a theme for a whole course. Different versions of an applet can appear at different stages of a course to illustrate aspects of the problem being studied.

An applet can also be in the form of a mathematical puzzle. Students are then challenged to explain how the applet works and extract the mathematics from the puzzle.