

## Creator Numbers and the 113 Mystery

The first problems in this chapter bring the joy of number play to pre-algebra students. However, the Four Fours problem discussed in the latter part of the chapter will challenge students with considerably more mathematics in their background. With a careful selection of assigned problems, you can make this chapter of interest to students with widely varying backgrounds.

The point of discussing a choice of symbols for the creator number is to underscore the idea that the creation of a new symbol is an arbitrary choice. Some students will prefer using the “smiley face” for the creator number or even another symbol of their own design. Encourage them to do so. As long as all students understand the meaning of the symbol, their choice is as good as the one in the text.

When discussing the problems, remind students that solutions are not necessarily unique. There are usually several ways to express a given number using the same number of integers.

This chapter is short, but don’t be deceived into thinking it can be finished quickly. Most of the problems in this chapter require a bit longer to complete than students might be used to.

Solving the problems in this chapter requires a great deal of trial-and-error number play as well as developing strategies for the creation of expressions for some of the more difficult numbers. Encourage students to use a calculator and pencil and paper to whatever extent they like. You are likely to find that many students develop an appreciation for the value of mental manipulation of numbers for problems like these. For the problems in this chapter, mental manipulation is far more efficient and effective than relying on technological support. Use of the computer is not likely to be of much help without advanced programming skills.

P11. This works well as a conventional assignment—that is, students do it on their own. Be sure to allow enough time for students to finish the problem. The length of time varies significantly with their facility for manipulating numbers.

Take the time to discuss different solutions offered by students before continuing with additional material. Doing this is a very good way to stimulate imaginations and suggest ideas useful in the next set of problems. Even those students whose expressions are all valid will benefit when they see the solutions of others. Taking the time to discuss different solutions is even more important after problems P12 and P13.