

## Teaching Notes

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### One-Person Games

#### Triangle Peg Solitaire

There are three primary goals in this section. The first is to play and enjoy Triangle Peg Solitaire. If the game isn't readily available, the materials for making one certainly are. Take the time to find the game or make one. Not only is playing the game fun, but using the game to follow the suggestions in the text and to help solve some of the problems seems almost essential.

The second goal is to fully understand how the trial-and-error method of searching for a solution is applied to Triangle Peg Solitaire. The method illustrated in the text can be applied to a wide variety of problems once it is understood in this simpler game setting.

The third goal is to write a Java program that will answer the questions about Triangle Peg Solitaire that are raised in the problems. Doing this is an effective way to demonstrate an understanding of the trial-and-error method used. Because the program will also be used in subsequent sections, be sure to allow sufficient time for students to perfect their programs before continuing with the next section.

Problem P1: The ability to recognize unique cases is often important. If students have difficulty with this problem, I suggest asking them to create the same table for other solitaire boards that you or they makeup.

Don't forget that the examples and problems in the text on pages 12–16 make use of the Table of Jump Numbers given in the text as the solution to problem P3. Although there are many valid Tables of Jump Numbers that are the solution to that problem, one had to be chosen for the examples in the text. If the examples haven't clarified the nature of the trial-and-error method used, it would be instructive to have students rewrite the examples using the information in the Table of Jump Numbers they created as a solution to problem P3.

Problems P5 through P7: These problems help assure that the trial-and-error method illustrated is actually understood. If students get an incorrect answer, ask them to not just find the correct answer but to also determine how they obtained the incorrect answer. Doing this will help them distinguish misunderstanding the procedure from computational errors.

If students are capable of creating their own procedure and writing a program similar to one of those on pages 19–24, by all means encourage them to do so. They should, however, keep their program as general as possible. The portion of the program that appears on page 20 will be modified several times in subsequent pages. If a student program is sufficiently general, it too can be modified in a similar manner.