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Using a historical problem in a mathematics problem solving class

Abstract

The jug problem is a famous historical problem which can be found in both Eastern and Western literature. The problem is also called the Tartaglian vessel puzzle, Poisson's jug problem and Han Xin's Oil dividing problem, etc. There are various ways to solve this problem, such as heuristic methods, search methods or graphical (or billiard) methods, which can often be found in textbooks or reference books of problem solving, discrete mathematics, recreational mathematics, number theory, computer programming or artificial intelligence, etc. In this presentation, we will report how to introduce this interesting problem in a mathematics problem solving class, as well as the strategies adopted in finding the optimal solution of the problem, in the sense that the number of steps involved will be the least possible.

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