Using "1 = 2" to Inspire and Learn

Kirthi Premadasa, University of Wisconsin Marathon County,
and **Geetha Samaranayake,** University of Wisconsin Whitewater

Kirthi Premadasa obtained his MS and PhD from Purdue University and has over 22 years of undergraduate teaching experience in Sri Lanka and the US. He is an assistant professor of mathematics at the University of Wisconsin Marathon County.

Geetha Samaranayake obtained her MS and PhD from Purdue University and has over 24 years of undergraduate teaching experience in the US. She is an associate professor of mathematics at the University of Wisconsin Whitewater.

Mathematical fallacies have an embedded sense of awe and mystery that can be used effectively in a classroom to inspire students to tackle a fallacy and find the "hidden" violation. In doing so, the student may discover the consequence of a rule violation in a stimulating manner, thus making a lasting impact of the rule as well as providing the student with a chance to master all concepts surrounding a fallacy, with a high degree of motivation, as the search for the violation is pursued. Fallacies have a tendency to create a "puzzle-solver" state of mind in a student, which can be tapped to generate motivation among students and greater mathematical accuracy. Results of a two-semester study are presented, where first-semester calculus students were provided with a number of fallacies covering three common algebraic violations.