

October 2008

Continued Radicals

Problem provided by Hossein Behforooz, Ph.D., Utica College

Find an expression for the continued radical

$$C = \sqrt{m + \sqrt{m + \sqrt{m + \dots}}}$$

in terms of m that does not involve a continued radical. Then determine all positive integers m so that C is a positive integer.

The Problem Solving Competition uses problems submitted by professors and students for the monthly mail-out. If problems are submitted from your college by a professor and student, and if the student problem is used in the competition, your math department will receive FREE as a prize, a beautiful silver medallion plaque. Send your original problem statements, and sketches to Dr. Raymond Greenwell, Editor *The Problem Solving Challenge*, Department of Mathematics, Hofstra University, Hempstead, NY 11549. This activity is sponsored by The American Society for Mathematics (*ASFM*).

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Non-square Factors

Problem provided by Jeff Hoag, Providence College

How many of the positive factors of the number 36,000,000 are *not* perfect squares?

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