California State University
Northridge

Department of
Mathematics

Problem of the Week

Proposed by Bernardo Ábrego and Silvia Fernández. **May 2-9**

The following is a well known fact:

> If a positive integer is not prime then it has a prime factor less than or equal its square root.

Show that a positive integer having more than four positive divisors has a prime factor less than its cubic root. In other words, show that every positive integer n, with more than four positive divisors, has a prime factor p such that $p < \sqrt[3]{n}$.

Deadline: May 9, 2005 before 9:00 PM.
Look for the "Problem of the Week" every Monday in the Daily Sundial (Daily Spotlight section) or in our web site **www.csun.edu/math/probweek**

Rules:

1. Open to all enrolled undergraduate and graduate CSUN students.
2. The first complete and correct solution will be awarded a diploma and the choice of a "Brain Teasers Super Star" or a five dollar prize.
3. The winner solution and the names of the authors of all correct solutions will be published in our web site (**www.csun.edu/math/probweek**). All authors whose solutions are complete and correct will receive certificates.
4. All solutions must be typed and sent electronically. PDF, Latex, or Word files are preferred.
5. All steps of the solution must be clearly justified.
6. Email your solution with subject "Problem of the week" to

   Bernardo.Abrego@csun.edu

7. Late solutions will not be considered.
8. For any questions contact the organizers

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