

Problem of the Week

Proposed by Bernardo Ábrego and Silvia Fernández.

February 21-28

Find the smallest positive integer k for which the equation

$$a(a^2 - k) + b(b^2 - k) = 2005$$

has a solution with a and b positive integers. Justify your answer.

Deadline: February 28, 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 the book "The Man Who Loved Only Numbers" (The story of Paul Erdős one of the most prolific mathematicians of all times), 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
Bernardo.Abrego@csun.edu, Silvia.Fernandez@csun.edu