

Problem of the Week

Proposed by Bernardo Ábrego and Silvia Fernández.

November 15-22

Find the maximum value of

$$\left(\frac{b-c}{a} + \frac{c-a}{b} + \frac{a-b}{c} \right) \left(\frac{a}{b-c} + \frac{b}{c-a} + \frac{c}{a-b} \right)$$

over all triples of non-zero real numbers $a < b < c$ such that $a + b + c = 0$.

Deadline: November 22, 2004 before 9:00 PM.

This is the last problem of the semester. The next problem will appear January 31st in the Daily Sundial (Daily Spotlight section) and 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 Benders" puzzle set 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

If you like puzzles and challenging problems ... join the Mathematics Department Problem Solving Workshop. We meet every Friday at 2:00 PM in FOB room 108. For more information visit our web site: www.csun.edu/math/workshop.