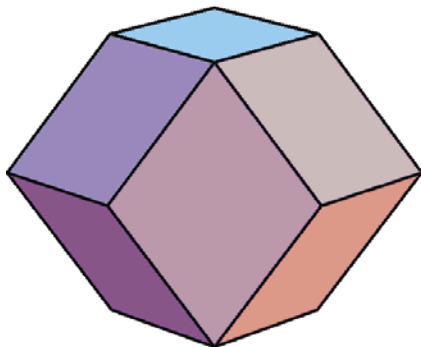


Problem of the Week

Proposed by Bernardo Ábrego and Silvia Fernández.

April 25-May 2



A cube and six congruent right pyramids are put together to construct a polyhedron with 12 faces. The base of each pyramid and the faces of the cube are 25 in^2 squares. The pyramids are affixed to the cube so that each cube's face coincides with the base of one pyramid. Two triangular faces of different pyramids sharing an edge form a rhombus (without this condition the resulting polyhedron could have 24 faces).

Find the volume of this polyhedron.

Deadline: May 2, 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 Bernardo.Abrego@csun.edu, Silvia.Fernandez@csun.edu