

# Humanistic Mathematics Network Journal

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Issue 18

Article 1

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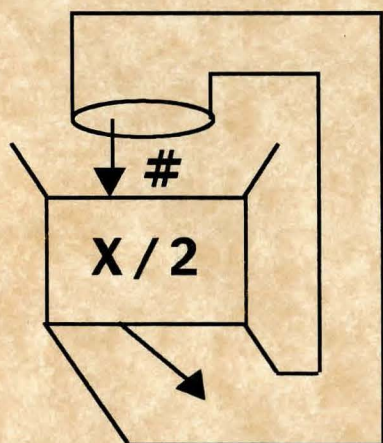
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# Humanistic Mathematics Network Journal

Issue #18    November 1998



*"Do nondoing,  
strive for nonstriving,  
savor the flavorless,  
regard the small as important,  
make much of little,  
repay enmity with virtue;  
plan for difficulty when it is still easy,  
do the great while it is still small.  
The most difficult things in the world  
must be done while they are easy;  
the greatest things in the world  
must be done while they are small."*

*- from the Tao Te Ching by Lao Tzu*

## In this issue...

- Natural Math (p. 1)
- Humanistic teaching in elementary school (p. 10)
- Mathematical architecture (p. 35)



## Invitation to Authors

Essays, book reviews, syllabi, poetry, and letters are welcomed. Your essay should have a title, your name and address, e-mail address, and a brief summary of content. In addition, your telephone number (not for publication) would be helpful.

If possible, avoid footnotes; put references and bibliography at the end of the text, using a consistent style. Please put all figures on separate sheets of paper at the end of the text, with annotations as to where you would like them to fit within the text; these should be original photographs, or drawn in dark ink. These figures can later be returned to you if you so desire.

Two copies of your submission, double-spaced and preferably laser-printed, should be sent to:

**Prof. Alvin White**  
**Humanistic Mathematics Network Journal**  
**Harvey Mudd College**  
**Claremont, CA 91711**

Essays and other communications may also be transmitted by electronic mail to the editor at AWHITE@HMC.EDU, or faxed to (909) 621-8366. The editor may be contacted at (909) 621-8867 if you have further questions.

The Journal uses the programs Microsoft Word and Page-Maker for the Macintosh. If you used either of these programs to prepare your paper, it would be very helpful to us if you sent a copy of your file on diskette along with the printed copies of the paper.

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## Cover

**It's never too early:** Many of the articles in this issue discuss humanistic mathematics with children in elementary grades, including Maria Droujkova's "Natural Math," John Eichinger's "Do the Great While It Is Still Small," and Kim Williams' "Architecture and Mathematics."

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## November 1998

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# From Newsletter #1

Dear Colleague,

This newsletter follows a three-day **Conference to Examine Mathematics as a Humanistic Discipline** in Claremont 1986 supported by the Exxon Education Foundation, and a special session at the AMS-MAA meeting in San Antonio January 1987. A common response of the thirty-six mathematicians at the conference was, "I was startled to see so many who shared my feelings."

Two related themes that emerged from the conference were 1) teaching mathematics humanistically, and 2) teaching humanistic mathematics. The first theme sought to place the student more centrally in the position of inquirer than is generally the case, while at the same time acknowledging the emotional climate of the activity of learning mathematics. What students could learn from each other and how they might come to better understand mathematics as a meaningful rather than arbitrary discipline were among the ideas of the first theme.

The second theme focused less upon the nature of the teaching and learning environment and more upon the need to reconstruct the curriculum and the discipline of mathematics itself. The reconstruction would relate mathematical discoveries to personal courage, discovery to verification, mathematics to science, truth to utility, and in general, mathematics to the culture within which it is embedded.

Humanistic dimensions of mathematics discussed at the conference included:

- a) An appreciation of the role of intuition, not only in understanding, but in creating concepts that appear in their finished versions to be "merely technical."
- b) An appreciation for the human dimensions that motivate discovery: competition, cooperation, the urge for holistic pictures.
- c) An understanding of the value judgments implied in the growth of any discipline. Logic alone never completely accounts for what is investigated, how it is investigated, and why it is investigated.
- d) A need for new teaching/learning formats that will help discourage our students from a view of knowledge as certain or to-be-received.
- e) The opportunity for students to think like mathematicians, including chances to work on tasks of low definition, generating new problems and participating in controversy over mathematical issues.
- f) Opportunities for faculty to do research on issues relating to teaching and be respected for that area of research.

This newsletter, also supported by Exxon, is part of an effort to fulfill the hopes of the participants. Others who have heard about the conferences have enthusiastically joined the effort. The newsletter will help create a network of mathematicians and others who are interested in sharing their ideas and experiences related to the conference themes. The network will be a community of support extending over many campuses that will end the isolation that individuals may feel. There are lots of good ideas, lots of experimentation, and lots of frustration because of isolation and lack of support. In addition to informally sharing bibliographic references, syllabi, accounts of successes and failures. . . the network might formally support writing, team-teaching, exchanges, conferences. . . .

Alvin White  
August 3, 1987