

# Challenge of the Week

## *Challenge of the Week # 4 - February 1 to February 8, 2008*

Let  $a$ ,  $b$ , and  $c$  be three unknown real numbers which are not integers. Let

$$n = a - b + 2008, m = b - c + 2008, k = c - a + 2008.$$

Suppose that  $m$ ,  $n$  and  $k$  are three consecutive integers. Find the three integers. Justify your answer.

*Direct any questions concerning this week's challenge to Duane Broline, OM 3218*

### Rules and Awards

- Any undergraduate currently enrolled at EIU is eligible to participate.
- Each solution is to be the work of one individual and is to be submitted with the solver's name, year in school, email address, local address and home address.
- Each solution is to be written or typed and is due in the main Mathematics Department office (OM3611) by 2:00 p. m., Friday, February 8.
- Entries will be graded on the basis of clarity of exposition and elegance of solution.
- An award of \$20 will be given for the best solution. In the case of a two-way tie, the award will be split. If there are more than two 'best' solutions, a drawing will be held for the award. In case no award is made for this week's challenge, \$20 will be added to the next week's award.
- Names of all solvers will be posted on the Challenge of the Week bulletin board and on the Challenge of the Week homepage: <http://www.ux1.eiu.edu/~dmbroline/chalweek/index.html>