

# Challenge of the Week

## *Challenge of the Week # 1 - August 28 to September 4, 2009*

You have an integer with many digits. This integer is one more than a multiple of 9. One of the digits is removed and the remaining digits are rearranged. The new number is 8 more than a multiple of 9. What digit was removed? Justify your answer.

*Direct any questions concerning this week's challenge to Gregory Galperin, OM 3361*

### 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, September 4.
- 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>