

Challenge of the Week

Challenge of the Week # 5 - September 25 to October 2, 2009

One hundred people live in a small village. Some of them are truth tellers, who always tell the truth, and the others are liars, who never tell the truth. Each person owns exactly one vehicle — a van, a pickup, or a sedan. Each person was asked three questions. Each person answered each question with either ‘yes’ or ‘no’.

1. Do you own a van?
2. Do you own a pickup?
3. Do you own a sedan?

Sixty people answered ‘yes’ to the first question, forty answered ‘yes’ to the second question and thirty answered ‘yes’ to the third question. How many liars are there in the village?

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, October 2.
- 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>