University Math Challenge

PROBLEM # 1

(1) Two fishermen were fishing. The first fisherman caught 18 fish, and the second 27 (all fish are the same size). When they had fried all 45 fish, a stranger joined them and all the fish were divided equally into three parts. The stranger paid the fishermen $90 for one equal share. How should the fishermen divide these $90 among themselves so that the division is fair?

(2) If the fishermen instead caught, respectively, 20 and 70 fish, and the stranger again paid $90 for his equal share, how should the fishermen make sure each gets paid a fair amount for their share?

Explain your answers.

Rules & Rewards

- 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 (OM 3611) or to Dr. Grant Lakeland by 2:00pm, Friday, September 30, 2022.

- Entries will be judged on the basis of clarity of exposition and elegance of the solution. That is to say, the *explanation* is more important than the answer.

- An award of $50 will be given for the best solution. In the case of a two-way tie, the award will be evenly split. If there are more than two 'best' solutions, a drawing will be held for the reward. In the case no award is made for this week's challenge, $50 will be added to the next week's award.

- Names of all solvers will be posted on the Challenge of the Month bulletin board and on the Challenge homepage: `http://www.eiu.edu/math/challenge.php`