



Monday cup #7 — Solution

Posted on: May 13, 2019

Due on: May 19, 2019



Problem

A party of three hikers arrived at a hilltop village in Kakheti from at the end of a strenuous journey after dark. They were received by two warm hospitable hosts W and M. Upon discovering that the hikers were hungry, the two hosts decided to share their food with them. W brought 3 Khachapuri and M brought 5 Khachapuri. Each Khachapuri was of the same size and each Khachapuri was divided into five equal slices. Each of these five people ate the same number of slices. In the morning the hikers decided to continue with their expedition but, before, leaving each hiker handed GEL80.00 to M. Since M had brought five Khachapuri, he decided to keep five-eighths of the total amount for himself and gave the remaining amount to W. However W did not agree with M's decision, as he felt that each person should receive the same amount. After an argument, W and M decided to approach the village tribunal for justice. The judge of the tribunal advised W to accept the amount given to him by M, but W was quite adamant and he wanted the issue to be solved by the tribunal. Eventually, the tribunal had to decide how to divide the money fairly between W and M. The judges explained to W and M how they reached their decision. After hearing their explanation, W realized that he should have accepted the amount which was offered to him earlier (as now he received a lesser amount). How much money did W receive after the tribunal decision?

Solution:

Earlier W received $(3/8)$ of GEL240 which amounted to GEL90. The tribunal explained that, since W ate 8 of the 15 slices from his three Khachapuri, he shared only 7 slices with the guests. On the other hand, M ate 8 of the 25 slices from his five Khachapuri. This way M shared 17 slices with the guests. After the tribunal's decision W received $(7/(7 + 17))$ of GEL240 which equaled to GEL70.

There were correct solutions from Gela Tsetskhladze (Georgia, the country).

The prize was split between Tsetskhladze

Rules

1. Anyone is eligible to participate. Each solution is to be the work of one individual without any input from faculty or others. An answer must be accompanied by appropriate justifications to be considered correct.
2. The solution is to be submitted with the solver's name, email, year in school (if applicable), local phone number, and local address. If you are submitting this for possible credit in a class, include your class number and instructors name.
3. The solution is to be typed or legibly written. Solutions must be submitted to the by 2 p.m. on the due date.
4. Entries will be graded on clarity of exposition and elegance of solution. An award of GEL10 will be given for the best correct 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 to determine two award winners.
5. Graduate students, faculty, and members of the general public are encouraged to submit solutions, but they will not be considered.