



## **Monday cup #5 – Solution**

**Posted on:** April 29, 2019

**Due on:** May 5, 2019



### **Problem**

In preparing to write an examination, **Erin MacDuff** made the following observations: the exam had twenty questions, he estimated that he would spend  $1/10$  hours per question, and the exam would take him 120 minutes to complete. However, during the actual examination, **Erin** discovered some difficult questions which each required  $1/4$  hours to complete. He also discovered some questions which were much easier than he expected and only took him  $1/30$  hours per question to complete. Seven of the questions, however, still required  $1/10$  hours. each to complete. Surprisingly, **Erin** was still able to complete the exam in 120 minutes. How many of the twenty examination questions did **Erin** find difficult?

**There were correct solutions from Dato Tavdgiridze (Georgia, the country), Nika Darsalia (Georgia, the country) and Gela Tsetskhladze (Georgia, the country). The prize was split between Tavdgiridze and 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 instructor's 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.

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Solution for this problem can be submitted proveweek@gmail.com