



## Monday cup #10

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**Posted on:** June 3, 2019

**Due on:** June 9, 2019



### Problem

#### Lower Elementary:

*Question:* Ten years ago Keda (Georgia, the country), had a population of approximately 8000. Jessie knew the digits 3, 7, 8, 9 were part of the actual population at that time, but could not remember the order of the digits. What might the actual population of Keda (Georgia, the country), have been if each digit is used once?

#### Upper Elementary:

*Question:* Nino takes her two cats to the veterinarian in a pet carrier which weighs 2.1 kg. Her older cat, Brinker, weighs 1 kg more than her younger cat, Skates.

When the vet weighs both cats in their carrier, the scale registers 11.3 kg.

How much does each cat weigh?

#### Middle School:

*Question:* In the diagram, P is the point (6, -4) and O is the origin. The path length from O to P is 10. How many points with integer coordinates have a path length of 10 from O?

#### Algebra and Up:

*Question:* A **Tengo** and a **Givi** begin a 4-mile race at the same time. The **Tengo** travels 2 miles per hour, and the **Givi** travels 24 miles per hour. After the **Givi** races for 8 minutes, he stops to take a nap. The **Tengo** passes the **Givi** and wins the race. How much time does it take for the **Tengo** to reach the finish line after it passes the **Givi**?

**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 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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გზადათბის თასი, кубок понедельника, Monday cup, Coppa del lunedì, Coupe du lundi  
Solution for this problem can be submitted proveweek@gmail.com