Lecture 6. Intermediate test

(4 points)
You have some dataset describing concentrations of five algae metabolites. For each algae there is species name, its genus and its group.

- Using ***pandas*** library find the average concentration of each of the metabolite in each aglae genus.
- Visualize the result using ***seaborn*** library.

(4 points)
You have noticed that ***map()*** function returns something different than ***list***. Simply saying, it returns ***iterator***. Up to this point, we used ***list(map(...))*** syntax, but remember that ***iterators*** in some cases are more preferable than ***lists***.
This task is devoted to understanding how iterators work.

- First create iterator via ***my_iter = map(lambda ...)*** construction that takes *[1,2,3,4,5,6]* and returns *True* if there is no remainder after division of the list's element on *3* and returns *False* otherwise.
- In infinite loop proceed the iterator using the ***next()*** function on it. Observe the appearing error in this loop.
- Write ***except*** block catching this particular error.
- Based on this usecase try to understand in which cases iterators might be more preferable than lists.

(4 points)
In this task, you need to use API of ***numbersapi.com*** site.
You are given a set of numbers: *17, 45, 999, 1883*. For each of the numbers, you need to find out if there is an interesting mathematical or historical fact about it. The answer should contain these facts marked as "math" or "hist".