



DETECTIVE WORK

This is a letter from the Arthur Poirot Detective Agency. Read it carefully and answer the questions.

Dear detectives,

I'm writing in the hope that you can help me. I'm working on a very important case and I've lost the clue leading to the detective on site. The last clues are these two photos he sent from the same location.

This is the last I heard from him. He told me he was about to enter a place next to the bank to make a payment. The only letter I can make out in the name of the place is "S" or "C", depending on whether it's the Latin or Cyrillic alphabet. Please help me find the detective

Agatha Holmes
Belgrade, March 7, 2019

Question 1:

In which city were these photos taken?

Question 2:

What's the name of the place next to the bank the detective said he was about to enter?



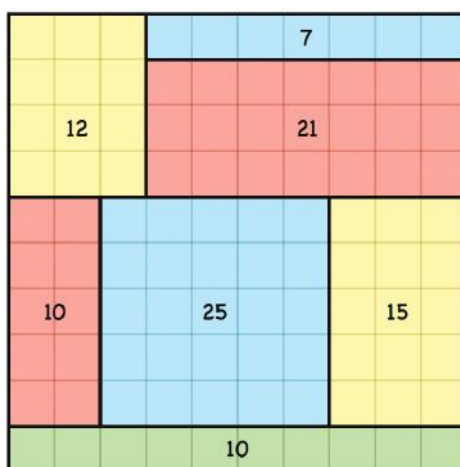
Please provide the answers and the evidence proving you right.





MONDRIAN'S SQUARE

The famous Dutch abstract painter and art theorist, Piet Mondrian, inspired mathematicians to think of an interesting problem. Mondrian's square is a square whose side lengths are natural numbers and is split into rectangles each of which has different dimensions. The rectangle dimensions are also natural numbers. Rectangles with dimensions 3×4 and 4×3 are considered to have the same dimensions.



The image shows an example of a 10×10 Mondrian square

Task 1: Draw a 4×4 Mondrian square divided into two rectangles.

Task 2: Draw a 4×4 Mondrian square divided into three rectangles.

When you cover the square with rectangles in the described manner, you can easily calculate the Mondrian's number, a quantity which represents the difference in the areas of the largest and smallest rectangle.

In the image, the number is $25 - 7 = 18$

Task 3: Draw a 4×4 Mondrian square so that its Mondrian number is 4.

Task 4: Can a Mondrian number in a 4×4 square be less than 4? Explain your answer.

Task 5: Draw a 5×5 Mondrian square in such a manner to get the lowest possible Mondrian number.

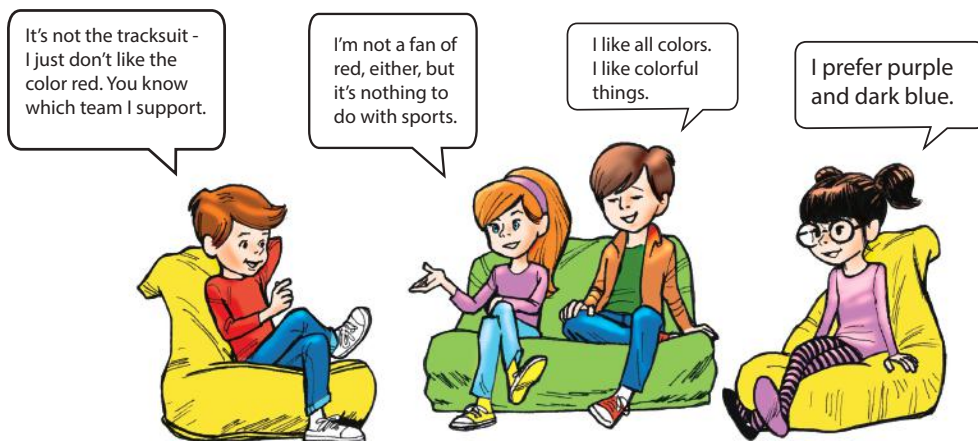
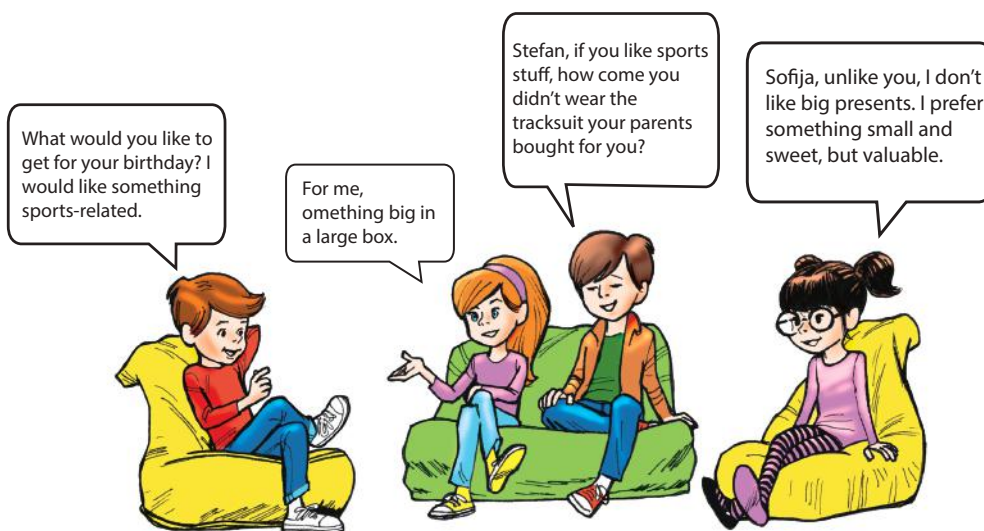
Task 6: Explain why the Mondrian number from task 5 cannot be lower.



BIRTHDAY

Imagine the following situation:

Nina, Sofija, Stefan and Davor are celebrating their birthdays on the same day, March 17. The four of you have 2,000 dinars each. So, your group can spend no more than 8,000 dinars on presents. You should make sure everyone gets a present of approximately the same value. It's not easy to choose a present for someone you only know from a textbook. A helpful source can be a discussion they had regarding birthday presents.



Davor, you only care if it's computer-related.



Your task is to think of four presents for Nina, Sofija, Stefan and Davor. You need to send a link to a website from which you would order the presents or a website containing the address of the shop in which you would purchase the gifts. The image of the present must be clear and you need to write the name and price of the present and who it is for.