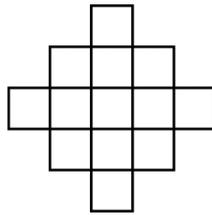




FIZMAT ELEMENTARY MATH OLYMPIAD

1st Grade

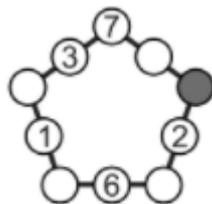
- Several ducks are walking in the yard. These ducks have 9 more feet than noses. How many ducks are there in the yard?
- How many squares can be found in the picture?



- The house has 12 rooms, and each room has two windows. In the evening, light was visible in 18 windows. How many rooms weren't the lights on?
- There is a sign at the entrance number 2 (see figure). On which floor is apartment 27, if there are 4 apartments on the floor?



- There are 19 numbers in a row such that the sum of any two adjacent numbers is 13. The second number is 5. What is the last number?
- There were 18 cockroaches in two boxes. When 6 cockroaches crawled from the first to the second, the boxes became equally divided. How many cockroaches were originally in the first box?
- Madina wants to write the numbers in empty circles so that the sums of the three numbers are the same on all sides of the pentagon. What number should she put in the dark circle?



- Daniyar, Aydin and Tamerlan meet a beautiful girl Amina. Amina asked them what their names are. The first boy replied: "I am Aydin." The second said: "I am not Aydin." And the third: "I am not Daniyar". It is known that only Tamerlan told the truth. What is the real name of the first boy, what is the name of the second, and what is the name of the third? Explain your answer.



FIZMAT ELEMENTARY MATH OLYMPIAD

9. The family has many children, but there is only one girl. One day she noticed that her age was equal to the sum of the ages of her brothers. Two years later, she was surprised to realize that her age was 8 years less than this amount. How many children are there in this family? Explain your answer

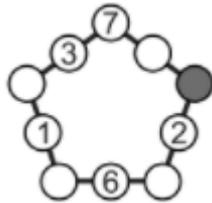
10. There are three teachers working in the kindergarten: Sarah, Alua and Inkar. Exactly two of them work every day from Monday to Friday. Sarah works three days, and Alua four. How many days does Inkar work? Explain the answer



FIZMAT ELEMENTARY MATH OLYMPIAD

2nd Grade

1. The snail had to crawl 12 m. In the morning before lunchtime, she crawled 12 dm, and after lunch she was tired and crawled only 12 cm. What distance was left for her to crawl in centimeters?
2. A rectangle was folded from three squares with a perimeter of 12 cm. Find its area.
3. There are 29 numbers in a row such that the sum of any two adjacent numbers is 14. The second number is 8. What is the last number?
4. The sum of the two numbers is 189. The first number ends with the digit 2, and if you erase this digit, you get the second number. What is the difference between these numbers?
5. There were 38 cockroaches in two boxes. When 6 cockroaches crawled from the first to the second, the boxes became equally divided. How many cockroaches were originally in the first box?
6. There are 19 boys in the group: 13 of them go to robotics, 11 to sailboats modeling. How many boys attend both activities, if it is known that only Almat does not go to neither of the two activities and Daniel only goes to robotics?
7. Madina wants to write the numbers in empty circles so that the sums of the three numbers are the same on all sides of the pentagon. What number should she put in the dark circle?



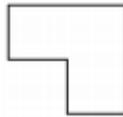
8. Aisultan, Beksultan and Nursultan took first, second and third places at the Olympiad. Each of them said one statement:
Aisultan: "Nursultan took second place."
Beksultan: "I took third place."
Nursultan: "Beksultan speaks the truth."
Who took first place if it is known that one of them is telling a lie, and the rest - the truth? Explain your answer
9. Rinat wrote out 25 consecutive natural numbers. It turned out to be 71 digits. What is the smallest of the numbers written by Rinat? Explain your answer
10. Amir forgot the code of the lock from the door to his entrance. He remembers that the code consists of four digits 2, 3, 5, 7, and has already tried 4 options: 3725, 7523, 3257, 2537, but they all did not fit. Find the correct code if you know that Amir put each number in the right place twice. Explain your answer



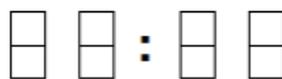
FIZMAT ELEMENTARY MATH OLYMPIAD

3rd Grade

1. There are 2021 people sitting in a circle, each of whom is either a knight who always speaks the truth, or a liar who always lies. Each person said about everyone except himself and his neighbors: "They are all liars." How many knights are at this table?
2. Dog Sharik at a speed of 3 m/s catches up with a cat Zhuchka running from him at a speed of 2 m/s. After 2 minutes and 30 seconds, the dog caught up with the cat. How many meters were between them when the chase began?
3. How many different three-digit numbers are there, the sum of the digits of which is 5?
4. A square piece was cut from the square sheet. We got the figure shown in the picture. The lengths of its four sides are equal to 9. What is the area of this figure?



5. The sum of the two numbers is 674. The first number ends with the digit 3, and if you erase this digit, you get the second number. What is the difference between these numbers?
6. There are 30 students in the class. They sat down at their desks in pairs so that each boy sits with a girl, and exactly half of the girls sit with the boys. How many boys are in the class?
7. The smallest of the two-digit numbers with two-digit sum of the digits was added to the largest of the two-digit numbers with single-digit sum of the digits. What is the result?
8. The electronic clock board consists of four fields:



The numbers on them are formed by glowing sticks (the length of each stick is equal to the side of the cage) and look like this:



The clock shows the time from 00:00 to 23:59. What time is it if the largest possible number of sticks glow? Explain your answer.

9. Rinat wrote out 85 consecutive natural numbers. It turned out to be 187 digits. What is the smallest of the numbers written by Rinat? Explain your answer.
10. Three boys shared 120 chips. First, Damir gave Farhad and Dauren as many chips as they had. Then Farhad gave Dauren and Damir as much as they had at that moment. And finally, Dauren gave Damir and Farhad as much as they had at that moment. As a result, everyone got equally. How many chips did each one have at the beginning? Explain your answer.



FIZMAT ELEMENTARY MATH OLYMPIAD

4th Grade

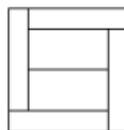
1. Altynbek's watches are 7 minutes fast, but he thinks they are 8 minutes behind. Altynbek looked at his watch and decided it was noon. What time is it now?
2. Almas rode a motorcycle along the highway at a speed of 20 km / h. There are two villages 40 km and 55 km from the starting point. How many minutes after the start the sum of the distance from Almas to these villages is 15 km?
3. Amir forgot the code of the lock from the door to his entrance. He remembers that the code consists of four digits 2, 3, 5, 7, and has already tried 4 options: 3725, 7523, 3257, 2537, but they all did not fit. Find the correct code if you know that Amir put each number in the right place twice.
4. The smallest of the two-digit numbers with two-digit sum of the digits was added to the largest of the two-digit numbers with single-digit sum of the digits. What is the result?
5. There are square carpets on the floor of a rectangular room measuring 4 by 5 meters. Each one adjoins the corner, each one - to his own. Three carpets with a side of 3 meters, one with a side of 2 meters. Find an area covered with exactly 2 layers of carpets.
6. The dog and the cat eat a large and long sausage, starting at different ends. A dog alone eats such a sausage in 4 minutes, a Cat - in 6 minutes. How long will it take for them to eat a sausage together?
7. The date of birth of Aibek Maratovich is recorded in eight digits 06/25/1987 - June 25, 1987. Note that no digit is repeated twice in the record of this date. What will be the first two digits in the next date record with the same property?
8. Several Indians and palefaced people stood in a circle. It is customary for them to lie to their own people and tell the truth to people with a different skin color. Each turned to his neighbor on the right and said one phrase to him. 8 phrases "You are an Indian" and 9 phrases "You are a paleface" sounded. How many Indians were there and how many palefaced? Explain your answer.
9. Vasya chose several different natural numbers. The product of the two smallest of them is 16, and the product of the two largest is 225. What is the sum of all Vasya's numbers? Explain your answer.
10. Nine friends were playing a computer game. Five guys went through half of the levels in the game, two - 3 levels each, two of them left to go through one level. If you add up the number of levels that all these guys have completed together, it turns out that they have completed the game exactly 5 times. How many levels are there in the game? Explain your answer.



FIZMAT ELEMENTARY MATH OLYMPIAD

5th Grade

1. The electronic clock shows hours and minutes. For example, at 6 o'clock in the morning they show 06:00, and at 6 o'clock in the evening - 18:00. How many minutes per day exactly three zeros will be visible on the clock display?
2. Rinat wrote out 85 consecutive natural numbers. It turned out to be 365 digits. What is the largest of the numbers written by Rinat?
3. Of the numbers, the squares of which are two-digit, the largest was chosen, and of the numbers, the cubes of which are three-digit, the smallest was chosen. What is the sum of the selected numbers?
4. In the evening, several friends agreed to meet in a cafe. In the end, half came on time, two-thirds of the rest were late, and four did not come. How many friends came to the meeting?
5. Aset considers a number to be *diverse* if all the numbers in his record are different. He wrote down all three-digit diverse numbers in ascending order. Where is number 798 on this list?
6. The date of birth of Aibek Maratovich is recorded in eight digits 06/25/1987 - June 25, 1987. Note that no digit is repeated twice in the record of this date. What will be the second two digits in the next date record with the same property?
7. The square is divided into rectangles of equal perimeter. The areas of unequal parts differ by 51. Find the area of the square..



8. Several Indians and pale-faced people stood in a circle. It is customary for them to lie to their own people and tell the truth to people with a different skin color. Each turned to his neighbor on the right and said one phrase to him. 8 phrases "You are an Indian" and 9 phrases "You are a pale-faced" sounded. How many Indians were there and how many pale-faced? Explain your answer.
9. The merchant walked to the market through three gates. Each time a quarter of his money was taken from him for the passage through the gate. The merchant entered the market with 81 coins. How many coins did the merchant have at the very beginning? Explain your answer.
10. The train travels at a speed of 60 km/h. It caught up with a train traveling at a speed of 36 km/h and began to overtake it. Overtaking lasted 5 minutes, during which some parts of the trains were opposite to each other. The length of the fast train is 900 meters. How many meters is the length of a slow train? Explain your answer.