





First Name: _____	Last Name: _____	Grade: _____
Teacher: _____	Parent's email: _____	

Logical Reasoning

Welcome to Math Challenge #2. In this challenge, you will explore math problems that require a logical level of analysis to solve them. You should read and understand the problem carefully and analyze the critical information when you think of its possible solutions. In the previous challenge, you exercised your logical reasoning when you solved 'mystery numbers' or 'guess my numbers'. In this challenge, the process should seem familiar. Explore different problem-solving strategies and make sure to compare the answer with other possible answers before coming to a logical conclusion. Do not hesitate to ask for help from your parents, siblings, or classmates.

If you are new to solving the Math Challenge problems, check out our complete overview of elementary problem-solving strategies at <https://www.mathinaction.org/problem-solving-strategies.html>.

Kinder & First Grade: solve at least 3 problems.
Second & Third Grade: solve at least 7 problems.
Fourth Grade and above: solve at least 12 problems.

	<i>Answer</i>
1. Sarah invited 3 friends for a playdate. Tia arrived before Maria. And Ben arrived after Tia. Who arrived first for the playdate?	
2. There were 8 cookies on the plate before Shauna took 1 cookie and Anita took 2 cookies. How many cookies were on the plate after Shauna and Anita took some?	
3. I have a math test on Friday, which is tomorrow. My teacher helped me prepare for the test yesterday. What day was yesterday?	
4. Michael is thinking of a number. When he added 8 to it, he gets 15. What is the number that Michael is thinking of?	
5. Tommy walked to school in the morning. The distance from home to school is 2 miles. Halfway to school Tommy dropped his special pen and did not realize it until he got to school. He then re-traced his path, found his special pen, grabbed it, and walked fast to school. He got to school on time. How many miles did he walk that morning? <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Home </div> <div style="text-align: center;">  School </div> </div>	
6. The day after tomorrow is Sunday. What day was the day before yesterday?	

7. I missed the bus because I arrived at the bus stop 5 minutes late. Luckily, the next bus with the same route will arrive in 10 minutes at 9:30 a.m. At what time did the missed bus arrive at the bus stop?

8. Monica is having a pizza party for herself and 13 of her friends. She is estimating how many pizzas she will need. If each pizza has 8 slices and each person can eat two slices, what is the minimum number of whole pizzas Monica should order?

9. The sum of two numbers is 24, and their quotient is 1. Find the two numbers.
Quotient is a result obtained by dividing one number by another.

10 Look carefully the pattern below, and find the missing number.

11. The product of two whole numbers is 100 and their difference is 21. Find the two numbers.

12. The sums of the numbers in each row, each column, and both main diagonals in a magic square are the same. What is the value of *e* in the magic square below?

33	<i>a</i>	14	<i>b</i>
12	18	31	<i>c</i>
<i>d</i>	<i>e</i>	7	23
<i>f</i>	21	28	<i>g</i>

13.

You are given a wooden cube with each side measuring 5 cm. With a pen, you must trace a path along the edges of the cube, going as far as you can without retracing over any edge. What is the total distance you can cover?

<p>14. Nolan walks 2.5 km west, turns 90° left, walks for 3.25 km. Then, he turns 90° right and walks for 1.75 km. Taufiq walks 3.25 km south, turns 90° left, then walks for 1.75 km. Find the distance between Nolan and Taufiq now.</p>	
<p>15. Damian says, "If John gives me \$15, he will have half as much as Nick. But if Nick gives me \$15 then three of us will have the same amount". What is the total amount of money that Damian, John, and Nick have among themselves?</p>	
<p>16. There are 210 students in the school math club and 308 who did not join the math club. Principal Livingston wants to divide them into sections in such a way that a section can have only math club members or non-math club members. If all sections should have the same number of students, and the principal wants to have as few sections as possible, find the number of sections in the school.</p>	
<p>17. The sum of 4 counting numbers is 39. The product of two of these numbers is equal to 80, and the product of the other two numbers is also equal to 80. What is the largest of these four numbers?</p>	
<p>18. If, $9 \clubsuit 8 = 289$, $3 \clubsuit 5 = 64$ and $3 \clubsuit 4 = 49$, find the value of $5 \clubsuit 6$.</p>	

Solutions are available on October 11, 2024
www.mathinaction.org