

Math Challenge #4



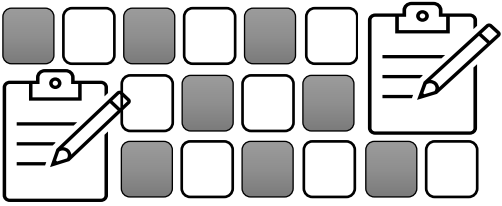
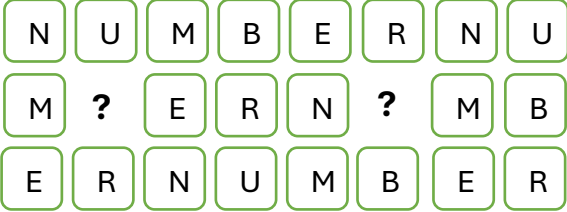
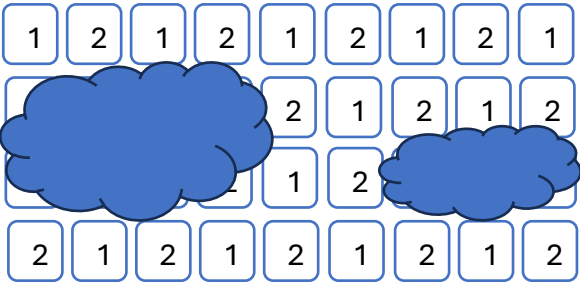
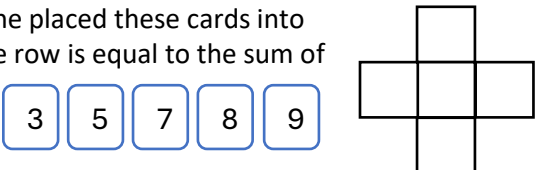
First Name: _____	Last Name: _____	Grade: _____
Teacher: _____	Parent's email: _____	

Problems with Cards

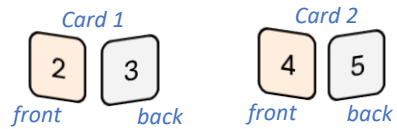
Welcome to Math Challenge #4. In this challenge, you will explore math problems involving cards. Put your thinking cap on and let's solve some of these card problems. Don't hesitate to ask for help. If you are new to any of the problem solving strategies, check out our complete overview of elementary 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.

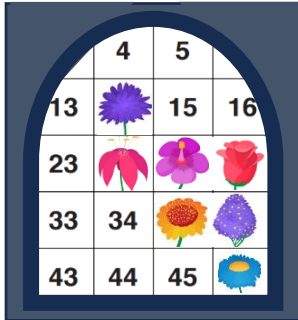
Answer

1.	<p>Ron has gray and white cards. He arranges the cards in a specific pattern as below. Two notepads are placed on top of some of these cards. How many gray cards are hidden beneath these two notepads?</p>		
2.	<p>A number of cards (with letters N, U, M, B, E, R) are arranged to continuously spelled the word 'NUMBER'. Which letter cards are missing?</p>		
3.	<p>Lisa has a stack of cards with either the number 1 or 2 on each card. She arranges the cards in a specific pattern as shown. What is the sum of the numbers covered by the clouds?</p>		
4.	<p>James has a set of cards that are numbered and stacked in order from 1 to 9. James and his sister take turns taking one card from the stack until there are no more cards left. If James starts first (taking the number 1 card), what is the sum of the numbers on his sister's cards?</p>		
5.	<p>Lisa has cards with the numbers 3, 5, 7, 8 and 9. She placed these cards into the squares, so that the sum of the numbers in the row is equal to the sum of the number in the column. Which number was placed in the center?</p>		

6. Samyak has two cards and wrote the digits 2, 3, 4 and 5, as shown. He wrote '2' on the front of the first card and '3' on the back of the first card. He wrote 4 on the front of the second card and '5' on the back of the second card. How many unique two-digit numbers can Samyak make using these two cards?



7. Number cards are arranged neatly in a specific pattern inside the shape. What is the sum of the numbers covered by the flowers?

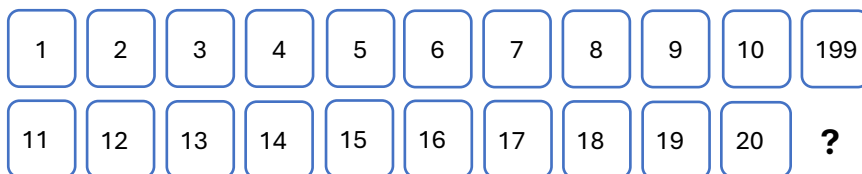


8. Jordyn has a set of cards that are numbered and stacked in order from 1 to 20; the top card is 1 and the bottom card is 20. Jordyn and her brother, Tim, take turns to take cards from the stack until there are no more cards left. First, she takes one card, then Tim takes 2 cards, she then takes 3 cards, then Tim takes 4 cards, and so on. This continues until there are no cards left. After adding all the numbers on the cards that each of them received, who has the higher sum and what is the difference in these two sums?

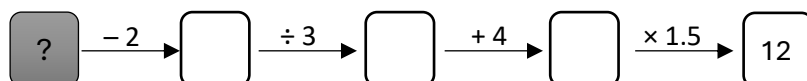
9. Pam took a card with a one-digit number. She then took another card with a one-digit number and placed it next to the first card to make a two-digit number. She said, "If I added 28 to this two-digit number, I would get 82". What is the sum of the one-digit numbers of these two cards?

10. Liam has 3 boxes of baseball cards with 50 cards in each box. He also has 5 boxes with 40 basketball cards in each box. If Liam goes to a store and buys 50 more baseball cards, how many total baseball and basketball cards will he have?

11. A set of cards are laid out as shown below. If the total sum of the numbers in each row is the same, what card number has to be placed at the question mark?



12. Find the number on the first card.



13. Number cards are arranged in the form of a triangle: 1 in the first row, 2 and 3 in the second row, 4, 5, and 6 in the third row, and so on. What is the sum of the number cards in the 10th row?

14. Pam has 59 red cards and one blue card. How many red cards must Pam remove so that 75% of the cards are red?

15. In the diagram on the right, six more number cards need to be placed so that the product of each line of three numbers is the same. Choose six cards from the following:

What is the product of each line of three numbers?

16. A standard deck of 52 playing cards has 4 suits: hearts, diamonds, clubs, and spades. Each suit has 13 cards (2 through Ace). If you draw two cards from a standard deck without replacement, what is the probability that both cards are aces? Express your answer as a fraction in its simplest form.

17. There are eight cards laid out on the table. Diana takes 4 cards and calculates the sum of the numbers on the cards she took. It appears that this sum is half of the sum of the numbers on the remaining cards on the table. What is the greatest number on the cards that she takes?

18. In how many unique ways can you arrange the following cards such that the Ace is never in the first position and the 7 is never in the last position?

Solution is available on November 8, 2024
www.mathinaction.org