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

Math and Logic Puzzles

Welcome to the Math Challenge #11. In this challenge, we will have fun working on math puzzles. Some puzzles require you to do math operations as well as exercise your reasoning skills. You may have to look for pattern, work backward, or use your logical reasoning to solve the problems. Enjoy!

Kinder & First Grade: solve <u>at least</u> 2 problems.
Second & Third Grade: solve <u>at least</u> 6 problems.
Fourth Grade and above: solve <u>at least</u> 11 problems.

Answer

1.	Three childen won lots of ballons at the fair. Lilian won 4 red balloons and 3 yellow balloons. Maria won 2 purple ballons and she got 1 more yellow balloon than Lilian did. Sherry won 2 green balloons and she got 1 more red balloon than Lilian did. How many balloons of **each color did they win**? Hint: Draw it out.	*Red: _____* *Yellow: _____* *Green: _____* *Purple: _____*

2. Six children suit up for a basketball game. They each have a shirt with a different number. Use the clues below to find which shirt belongs to each child.

- Marty's shirt has an even number.
- Norton's shirt number is greater than any other number.
- Ananya's shirt number is the least of all.
- Jessica's shirt number has a 3 in the tens place.
- Luke's shirt number is 10 more than Christian's shirt number.

Marty	Norton	Ananya	Jessica	Luke	Christian

Marty: _____

Norton: _____

Ananya: _____

Jessica: _____
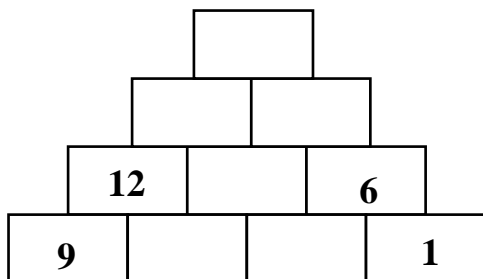
Luke: _____

Christian: _____

3. Rita, Glenda, Rasika and Bella each have a different colored bike. The bikes are red, blue, green and black. No one has a bike in a color that begins with the first letter of her name. Bella's bike is not red. Rita's is not blue. What color is each person's bike? You may use the table below to organize your thoughts.

	Rita	Glenda	Rasika	Bella
Red				
Blue				
Green				
Black				

Rita's bike: _____

Glenda's bike: _____

Rasika's bike: _____

Bella's bike: _____

4.	The object of the puzzle below is to figure out what would be the top number in the pyramid. Each pair of blocks adds up to the block directly above them.	

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          [    ]
      [    ][    ]
   [ 12 ][    ][ 6  ]
[  9 ][    ][    ][ 1 ]
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5. Use your addition and subtraction skills to complete this puzzle. Find the missing numbers such that every column, row, and diagonal add up to the given numbers.

It All Adds Up!

		2		**12**
8	9		8	**31**
4	3			**17**
6	8		9	**29**
23	**25**	**18**	**23**	**27**

		2		**12**
8	9		8	**31**
4	3			**17**
6	8		9	**29**
23	**25**	**18**	**23**	**27**

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6. There are four dog owners: Liza, Timothy, Giselle and Mark. Each of them owns a dog. Use the following clues to match the dog owners to the dogs.

These are the following dogs: ***Dusti the Dalmatian, Bugle the Beagle, Benji the Bulldog, and Louie the Labrador.***

- The dog belonging to Timothy is not a beagle or a bulldog.
- Dusti's owner is female, and she enjoys taking Dusti on woodland walks.
- Louie loves going to the seaside with his owner who likes to swim.
- Liza does not like taking her dog into the woods.
- The bulldog, who is rather lazy, is not owned by Mark.

You may use the table below to organize your thoughts.

	Liza	Timothy	Giselle	Mark
Louie the Labrador				
Bugle the Beagle				
Benji the Bulldog				
Dusti the Dalmatian				

DOG	OWNER
Louie the Labrador	
Bugle the Beagle	
Benji the Bulldog	
Dusti the Dalmatian	

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7. Some pages are missing from an open book. On the left page, you can see page 52, and on the right page you can see page number 61. How many double-sided pages are missing?

8.	Sofia, Corrie, Thomas, Addison and Natalie all chose a different number from the following list.						

52	29	36	75	24	47

Use the clues below to find which number each of them chose, and which number was not chosen at all?
- Addison's number was even and it was not the smallest number.
- Corrie or Natalie did not choose the smallest number.
- Thomas chose a number that was larger than the average.
- Corrie's number was odd, but it was not prime.
- Natalie's number is a multiple of 13.
- Sofia chose a number that was divisible by both 4 and 6.

Number	Name
52	
29	
36	
75	
24	
47	

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9. For school fundraising, Catalina, George, Lily, Meghan and Winston made 87 muffins altogether. George made 16 muffins and he put nuts in ¼ of them. Catalina made 1 less muffin than George and she put nuts on one third of them. Lily and Meghan each made 3 more muffins than Catalina made. Lily put nuts in 1/3 of her muffins while Meghan put nuts in ½ of her muffins. Winston put nuts in ¼ of his muffins. How many muffins in all had nuts?

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10. The students at the Bake Sale are selling cupcakes. They offer chocolate cupcakes, strawberry cupcakes, and coconut cupcakes. Henry counted the coconut cupcakes and found that there were 6 short of 5 dozen. The students had 30 more strawberry cupcakes than coconut cupcakes and a dozen fewer chocolate cupcakes than strawberry cupcakes. When packed in boxes holding 6 items per box, how many boxes of each item did they have?

For coconut cupcakes:

_____

For strawberry cupcakes:

_____

For chocolate cupcakes:

_____

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11. Avaneesh's mother is five times as old as Avaneesh is now. However, five years ago, she was nine times as old as Avaneesh five years ago. Find both their ages now.

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12. Felicity, Ben, Sierra and Raina all had their birthdays this month. They were turning 6, 9, 11 and 12 years old. They received the following presents: a guitar, a bike, an aquarium, and a smartphone. Use the following clues to find out which present each person got and how old they are.
- The bike was given to the 11-year-old.
- Raina, who is the second oldest, did not get a guitar.
- The youngest person loves fish and got the aquarium.
- The youngest person is not Sierra.
- The smartphone was given to the oldest person, who is not Felicity.
- Sierra is not the oldest girl.

Person	Age	Present
Felicity		
Ben		
Sierra		
Raina		

13.	On each Friday last January, the temperature was a record low temperature for the date.		

13. On each Friday last January, the temperature was a record low temperature for the date.
   - On Friday, January 31, the temperature was 5°C, which was 7 degrees higher than the temperature on the Friday before.
   - On January 10, it was 2 degrees lower than the temperature on January 17.
   - On the first Friday of the month, the temperature was 3 degrees lower than that on January 24.
   - The temperature on the Friday in the middle of the month was 6 degrees higher than on Jan. 3.

   Find the temperature reading for each Friday of the month?

Date	Temperature
January 3	
January 10	
January 17	
January 24	
January 31	

14. Four families traveled from different places to vacation together at a lake.
   - The Kilstrom family drove 210 miles.
   - The Wang family drove 50 miles less than the Kilstroms drove.
   - The Ramsey family drove 100 miles more than the Wangs drove.
   - The Sarwono family drove 110 miles more than the Wangs drove.

   Below is information on the gas mileage for each family's car.

   The Sarwonos' car gets 30 miles per gallon (mpg)

   The Ramseys' car gets 24 miles per gallon (mpg)

   The Kilstroms' car gets 20 miles per gallon (mpg)

   The Wangs' car gets 15 miles per gallon (mpg)

   How many gallons of gas did each family use to get to the lake? Round your answers to the nearest tenth.

Family	Gallons
Sarwono	
Ramsey	
Kilstrom	
Wang	

15. Six students attached their art projects on the display board like shown below.

   Match the art project with the name of the student following the clues.
   - Mehak's project is above Iris's.
   - Carla's project is between Ben's and Iris's.
   - Ben's project is on the left side of the display board
   - Aanya's project is closer to Mehak's than Sid's is.

   Top row:

   _____ _____ _____

   Lower row:

   _____ _____ _____

16. Find a solution. Different letters represent different digits. A digit is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. Hint: S = 4, A = 7

   CATS
   +HATE
   DOGS

   CATS: _____

   HATE: _____

   DOGS: _____

Solution is available on March 20, 2020 at www.mathinaction.org