Math Challenge #5

Multi-steps

Kinder & First Grade: solve <u>at least</u> 3 problems.
Second & Third Grade: solve <u>at least 6</u> problems.
Fourth Grade and above: solve <u>at least</u> 12 problems.

		Answer
1.	There were 5 melons in Tina's garden. Two of them were harvested. One of them was rotten so Tina threw it away. How many melons are left in the garden?	*2*
2.	The answer to each of the following addition problems is on the back of each card. How many of the following 6 cards have the number 12 on the back?	*4*

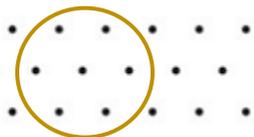$$9 + 4 \qquad 3 + 4 + 5 \qquad 7 + 6$$

$$8 + 4 \qquad 2 + 4 + 6 \qquad 1 + 8 + 3$$

		Answer
3.	How many dots are outside the circle?	*10*

		Answer
4.	Caitlin is sorting number cards into 3 boxes as shown below. How many number cards should go in the box labeled C?	*5*

36   12   41   53   26   31   47   21   62   19   38

M
Numbers that are smaller than 22

C
Numbers that are greater than 22 but less than 45

T
Numbers that are greater than 45

		Answer
5.	Thalia put her stuffed animal's collection in boxes. When she was finished, she had 4 boxes of 10 stuffed animals, and 1 box of 4 stuffed animals. How many stuffed animals does Thalia have altogether? 4×10+4=44 stuffed animals	*44 [stuffed animals]*

6.	Anton runs 5 miles on a sunny day, and he runs 2 miles on a cloudy day or when there are clouds in the sky. The chart on the right shows last week's weather. How many miles did Anton run last week?		26 [miles]

Anton runs 5 miles on a sunny day, and he runs 2 miles on a cloudy day or when there are clouds in the sky. The chart on the right shows last week's weather. How many miles did Anton run last week?

Sunny days: 4 x 5 miles = 20 miles
Cloudy days: 3 x 2 miles = 6 miles
Total: 20 + 6 = 26 miles

SUN AUG 19	Mostly Sunny
MON AUG 20	Sunny
TUE AUG 21	Mostly Sunny
WED AUG 22	Partly Cloudy
THU AUG 23	Sunny
FRI AUG 24	Sunny
SAT AUG 25	Sunny

26 [miles]

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7. Houses on Redmond street are numbered with consecutive even numbers. If the first house is numbered 52 and the last house is numbered 88, how many houses are on Redmond street?
Note: Consecutive numbers are numbers that follow each other in order.
The houses will be numbered: 52, 54, 56, 58, …, 84, 86, 88.
If we subtract each number by 50, we will have: 2, 4, 6, 8, …34, 36, 38.
If we divide each number by 2, we will have: 1, 2, 3, 4, …17, 18, 19 → 19 numbers
Or another way: (88-52) / 2 + 1 = 19

19 [houses]

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8. Two mangoes cost the same as 5 peaches. If a mango cost $1.50, how much does a peach cost?
Two mangoes cost: $1.50 + $1.50 = $3.00. Five peaches cost the same as two mangoes, which is $3.00. Therefore, one mango costs: $3.00 ÷ 5 = $0.60 or 60 cents.

$0.60 or 60 cents

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9. In 2018, the price of Sumatra coffee at the ABC store is $9.00 per pound. Holy predicts that the price will increase by $0.25 per year for the next 10 years. If she is correct, in what year will the price of one pound of Sumatra coffee in the ABC store be $10.75?
Increase on the price: $10.75 - $9.00 = $1.75. Since it will increase by $0.25 per year, and there are 7 of $0.25 in $1.75, then it will be 2018 + 7 = 2025.

2025

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10. The school book fair is happening this week. Ella is excited to purchase some books from saving some of her allowance. All paperback books cost the same. If Ella buys 5 paperback books, she will have $3 left. If she buys 6 paperback books, she will need $12 more. How much does a paperback book cost?
Draw a model.

$3 — $12
5 books — 6 books

Distance in books: 6 books – 5 books = 1 book
In money equivalent it is equal to $3 + $12 = $15

$15

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11. During the upcoming winter break, Connor's goal is to read these 4 books: The Wicked King, the Outsiders, the Fault in Our Stars, and the Cruel Prince. He plans to read the Wicked King sometime after he reads the Cruel Prince. How many different orders can Connor read these 4 books?
Make a chart or organized list.
4 books, __ __ __ __ The Wicked King can't be the first book.
If the Cruel Prince is on the first place, then on the second place could be any of the 3 books, on the 3rd place any of the 2 left, thus, C 3 2 1 = 6 ways
If the Cruel Prince is on the second place __ C __ __, on the first place could be only 2 books (the Outsiders, the Fault in Our Stars), on the third place any of the 2 books that are left, thus 4 ways
If the Cruel Prince is on the third place, then after it only the Wicked King, so on the first position there are 2 options to put the book, on the second, only 1. 2 1 C W, thus 2 ways to order
6 + 4 + 2 = 12 different orders to read these books.

12

| 12.	If each child eats exactly 2/3 of a mini pizza, how many children can be fed with 12 mini pizzas?	*18 [children]*
	Think about how many 2/3's are there in 12 wholes. Or 12÷2/3 = 12×3/2 = 6×3 = 18	

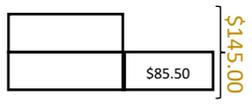| 13.	Students in Ms. Porter's class are standing in a circle. Students are evenly spaced apart and are consecutively numbered around the circle. The student with number 4 is standing directly across from the student with number 18. How many students are in the class.	*28 [students]*
	Hint: Draw it out or illustrate the situation	
	14×2 = 28 students	
	4 18-4 = 14 half 18	
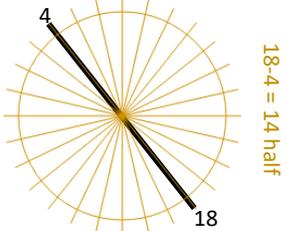
14.	Danika bought a keyboard and a stand for the keyboard for $145.00. The keyboard costs $85.50 more than the stand. How much did Danika spend on the keyboard?	*$115.25*
	Hint: Draw a model	
	Stand Keyboard $85.50 $145.00 1) $145+$85.50 = $230.50 the cost of 2 keyboards 2) $230.50 ÷ 2 = $115.25 the cost of the keyboard	
	Another way: Find the cost of a stand: (145-85.50)/2 = 29.75. This is the cost of a stand. Thus, the cost of the keyboard: 29.75+85.80 = 115.25.	

15.	The sum of 4 whole 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?	*16*
	Let's find the factors of 80. The sum of all 4 numbers is 39, thus the factors are below 40. 80 = 4×20=8×10=16×5	
	The numbers are 5, 8, 10, 16. Check: 8 + 10 + 5 + 16 = 18 + 21 = 39. The biggest number is 16	

16.	There are 4 songs playing in a loop without any break. The first song (A) lasts 3 minutes, the second song (B) lasts 2 minutes and 30 seconds, the third song (C) lasts 4 minutes, and the last song (D) lasts 2 minutes. The third song (C) just started when Angelica left home. She returned home exactly one hour later. Which song was playing when she got home?	*The third song or Song C*
	The total length of all the songs C + D + A + B is 4 + 2 +3 + 2:30 = 11min 30 sec	
	1 hour = 60 minutes, 5 full cycles of 4 songs (CDAB) will play for 57:30 minutes.	
	Then it will play Song C for 3 minutes. 57:30 + 4 = 1hour 1 min 30 sec	