Math Challenge #5

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

Sharing and Halving

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.	Mei Jie's mom bought 4 cookies. She gave the cookies to Mei Jie and her sister. Each of them will get the same number of cookies. How many will each one get?	*2 [cookies]*
2.	Laura picked 6 roses from the garden. She has 3 vases and she would like to put an equal amount of roses in each of the vases. How many roses are in each vase?	*2 [roses]*
3.	Ron's mom bought a superhero sticker sheet. There are 8 stickers in the sheet. Ron's mom told him that he can use half of the stickers to decorate his math binder. How many stickers can Ron use to decorate his math binder?	*4 [stickers]*
4.	There are 3 chocolate chip cookies and 6 oatmeal cookies. The cookies will be shared equally between 3 friends. How many cookies will each one get?	*3 [cookies]*
5.	Tim uses 2 (Math/Science) + 1 (writing) + 1(music) + 1 (social studies) = 5 notebooks Tim and Jim use 2×5 = 10 notebooks. Number of books that are not being used yet: 12 − 10 = 2 notebooks.	*2 [notebooks]*
6.	After Angela took 1 apple, Connie took 2 apples, and Fabian took 3 apples, there were 14 − 1 − 2 − 3 = 8 apples. Jenny and Ted each got: 8 ÷ 2 = 4 apples	*4 [apples]*
7.	Since the total amount does not change, which is $14 + $8 or $22, then in the end they will have $22 ÷ 2 or $11 each. Trisha has $14, therefore, she should give Clarice $14 − $11 = $3. OR draw a model. Trisha Clarice $14-$8 = $6 To have an equal amount of money they need to split the difference in half. $6 ÷ 2= $3	*[$] 3*

8.	First, we find the number of chocolate pieces along the sides of the box. There are 4+2+4+2 = 12. Then 12 ÷ 6 = 2 pieces	*2 [pieces]*

9.	You can make the model or pretend that you know the number of tickets for 2 kids. Let's say Vedah had 19 tickets, Jon 1. Together they had 19+1 = 20. Which means they will have 10 each after Vedah will give 9 tickets to Jon.	*9 [tickets]*

10.	(67 − 11) ÷ 4 = 14 students	*14 [students]*

11.	After giving cookies to his class, he had 80 − (2 x 28) = 24 cookies. Since he had 5 cookies left, he must have given 24 − 5 = 19 cookies to the school office.	*19 [cookies]*

12.	Draw a model Shota Madi 24 116 116+24 = 140 cubes, if Madi had the same amount as Shota. 140 ÷ 2 = 70 cubes. Shota has 70 cubes.	*70 [cubes]*

13.	1st 2nd 3rd Since all 9 units equal 49.5 cm, each unit or block is 49.5÷9 = 5.5 cm. Third piece has 6 units = 5.5 x 6 = **33.0 cm**.	*33 [cm]*

14.	Think about the least common multiple of the numbers 2, 3, 4, 5, and 6. LCM (2,3,4,5,6) = 60 Or if the number is divisible by 2 it is even, at the same time it is divisible by 5, thus the number ends on 0. The number is also divisible by 3, so it could be 30, but 30 is not divisible by 4, so, the smallest number that works is 60.	*60 [pieces]*

15.	Draw a model. Jaya Miranda Zelda 5+10 15 30 gumballs 30 gumballs make a quarter of all gumballs. 30×4 = 120 gumballs in a jar	*120 [gumballs]*

16.	The number written on a sticky note must be divisible by 9, so the sum of the digits must create the multiple of 9. 3 + 1 =4. Possible multiples of 9: 9, 18, 27,… It cannot be 9, because you can't split it into two equal digits. 18 − 4 = 14 14÷2 = 7. So, 7 is the digit , the number of flash cards 3771. Check 3 + 7 + 7 + 1 = 18, so it is divisible by 9. 27 and other multiples won't work, because 27-4 = 23. 23 divided by 2 will give two-digit number, and we are looking for a digit.	*7* *or* *7 and 7*

17.	a. What was the original price of the scarf?	

17.

a. What was the original price of the scarf?

b. If she split the final cost among the three of them, how much would each person have to pay?

Draw a model.

a. $72
b. $18.90

1. Jessica paid $56.70 for the blue piece and 5% tax for it(second picture), or 21 units, if we split it into units, 5% each.
2. Which means $56.70÷21 = $2.70 is 5% of the scarf cost.
   $2.70×20 = $54 (which is 75% of the original cost)
3. The price of the original scarf before the sale: $54÷3×4 = $72 the price of the original scarf before the sale.
4. Each of the sisters paid: $56.70÷3 = $18.90.

18.

a. What is the ratio of Hazel's stickers to Amir's stickers now?

b. How many stickers does Gloria have now if they have a total of 288 stickers?

a. 18 : 5
[Hazel : Amir]
b. 104 [stickers]

a. Gloria : Hazel : Amir

   3 : 4 : 5 You can't take 1/3 of 4, so let's multiply by 3 the whole ratio

   9 : 12 : 15

1/3 of 12 = 4 units of stickers Hazel gave to Gloria

2/3 of 15 = 10 units of stickers Hazel receives from Amir

New ratio of units of stickers that Hazel has: 12 – 4 + 10 = 18 units.

New ratio of units of stickers that Amir has: 15 – 10 = 5 units.

New ratio of units of stickers that Gloria has: 9 + 4 = 13 units

Hazel : Amir

  18 : 5

b. Total number of units (in the new situation) for Gloria, Hazel, and Amir: 13 + 18 + 5 = 36

36 units = 288 stickers

1 unit = 288/36 = 8 stickers

Gloria has 13 units, which is 13×8 = 104. Gloria has **104 stickers** now.

Solution is available on December 10, 2021, at www.mathinaction.org