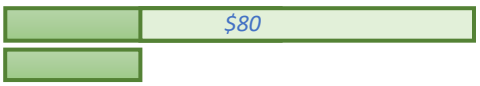
First Name: _____ **Last Name:** _____ **Grade:** _____

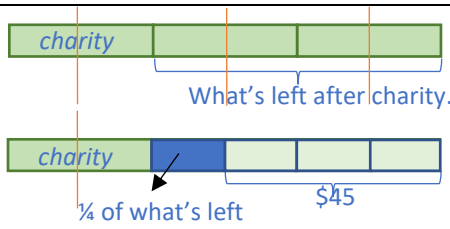
Teacher: _____ **Parent's email:** _____

Money

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

		Answer
1.	Orion has $3. Nishant has $3 more than Orion. Ian has $3 less than Nishant. How much money do they have in total? $3 + $6 + $3 = **$12**	*$12 or $12.00*
2.	At first, Tina has $8, and Mike has $1. Tina then gives Mike $2. How much more money does Tina have than Mike now? After Tina gives Mike $2, Tina would have $6 and Mike would have $3. So, Tina has $3 more than Mike.	*$3 or $3.00*
3.	Jeremy has a Mysterious Money Machine that will double any amount of money placed in it and add $1 to the doubled amount. How much money will he get from placing a five-dollar bill in the machine? $5 + $5 + $1 = $11	*$11 or $11.00*
4.	Four identical binders cost a total of $8. How much would three of the identical binders cost? The cost of 1 binder is $8÷4 = $2. So, three binders will cost $2 + $2 + $2 = $6	*$6 or $6.00*
5.	Steve was offered a job at the nearby golf course. The owner offered him the following. Offer 1: $500.00 per seven-day week. Offer 2: $5 for the first day and agreed to double the previous day's amount for each following day. Which offer would make Steve the most amount of money in a week? Offer 1: $500 **Offer 2:** $5 +$10 + $20 + 40 + $80 + $160 + $320 = $635 **(A BETTER DEAL)**	*Offer 2*
6.	We can look at $11 as $10 and $1. If we split $10 into half, we get $5.00, and if we split the $1 into half, we get $0.50. So, half of $11 is $5 + $0.50 = **$5.50.**	*$5.50*
7.	One way to solve is by guess 'n check method. 90+10 = 100. And 90 - 10 = 80. Or you may draw a model. Camera / Case:  $100 The case: ($100 - $80) ÷ 2 = **$10**	*$10 or $10.00*
8.	Start with the final number and work backwards with opposite operations. $51 - $1 = $50, $50 ÷ 2 = $25, $25 – 1 = $24, $24 ÷ 2 = **$12**	*$12 or $12.00*
9.	Since $7.75 ÷ 5 pounds = $1.55, the 5 pounds of grapes is a better buy ($1.55 < $1.69).	*Option 2*

10. We can draw a model.



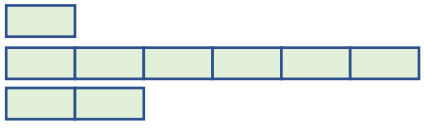
$45 ÷ 3 = $15
$15 × 6 = $90

$90

11. $1,000,000 ÷ $50 ÷ 365 = 54 R 290 ≈ 55 years

55 [years]

12. Anjali
Frank
Diane



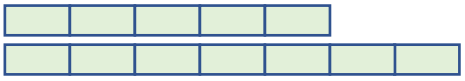
One unit:
$1,800,000 ÷ 9 = $200,000
Anjali and Diane:
$200,000 + (2×$200,000) =
$600,000

$600,000

13. If 7/8 of Paula's money equals to $280, this means 1/8 of her money equals $280 ÷ 7 = $40. Therefore, the total amount of her money (8/8) must be $40 × 8 = $320. Since Paula had $120 more than Fred, Fred must have at first $320 - $120 = $200. The watch cost ¼ of $200, which is ¼ × $200 = $50. In the end, Fred has $200 - $50 = **$150 left.**

$150

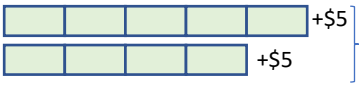
14. Donna
Dylan



Two units = $250
One unit = $250 ÷ 2 = $125
Total savings: 12 units = $125 × 12 = **$1500**

$1500

15. Josh
Lokey



$73 - $10 = $63 in total at the end.
$63 corresponds to 9 units. 1 unit is $63/9 = $7
Josh had $7 more dollars at the beginning.

$7 or $7.00

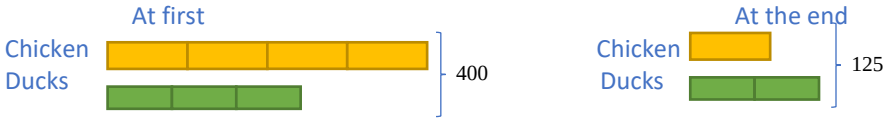
16. Let's assume the jar contained 1 nickel. The jar would have 9 quarters, 3 dimes and 1 nickel, which total to 13 coins. The value of the 13 coins: 25 × 9 + 10 × 3 + 5 × 1 = 260 ¢ or $2.60.
$13.00/$2.60 = 5 → so, there are 5 of these sets of coins.
The total number of coins must be 5 × 13 = 65 coins.
Another way to solve it is to make an organized list of different number of coins using the given ratio.

Number of nickels	Number of quarters	Number of dimes	Number of coins	Total value of coins (in cents)
1	$9 \times 1 = 9$	$3 \times 1 = 3$	$1 + 9 + 3 = 13$	$1 \times 5 + 9 \times 25 + 3 \times 10 = 260$
2	$9 \times 2 = 18$	$3 \times 2 = 6$	$2 + 18 + 6 = 26$	$2 \times 5 + 18 \times 25 + 6 \times 10 = 520$
3	$9 \times 3 = 27$	$3 \times 3 = 9$	$3 + 27 + 9 = 39$	$3 \times 5 + 27 \times 25 + 9 \times 10 = 780$
4	$9 \times 4 = 36$	$3 \times 4 = 12$	$4 + 36 + 12 = 52$	$4 \times 5 + 36 \times 25 + 12 \times 10 = 1040$
5	$9 \times 5 = 45$	$3 \times 5 = 15$	$5 + 45 + 15 = 65$	$5 \times 5 + 45 \times 25 + 15 \times 10 = 1300$

65 [coins]

17. First we need to find the number of chicken that are sold to determine the amount of money generated from selling them.

$892.50



If you will take four groups like you've got at the end, you'll get 4 units of chicken and 8 units of ducks. And it will be 500 birds in these 4 sets.

If you'll compare these 4 sets with the begininng. And 5 extra units of ducks correspond to 500-400 = 100. So, 1 unit of ducks is 100÷5 = 20. At first there were 60 ducks. And 400-60 = 340 chickens.
The number of chicken sold = ¾ of 340 = 255
255 chickens at $3.50 per chicken: 255 × $3.50 = **$892.50**

Alternatively, you can solve it using Algebra:
The number of chickens sold 340×3/4 = 255. The number of chickens and ducks sold = 400 – 125 = 275
¾ of chickens and 1/3 of ducks = 275; chickens + ducks = 400 → chicken = 400 – duck

$$\frac{3}{4}(400 - d) + \frac{1}{3}(d) = 275$$
$$300 - \frac{3}{4}d + \frac{1}{3}d = 275$$
$$300 - 275 = \frac{5}{12}d$$
$$d = 25 \div \frac{5}{12} = 60$$

The number of chicken = 400 – 60 = 340.
The number of chicken sold = ¾ of 340 = 255
255 chickens at $3.50 per chicken: 255 × $3.50 = **$892.50**

18. One way to solve it is to use ***guess and check strategy.***

$8

Suppose the original price of the deal was $6. Then the reduced price would be $3.
Also, Jared has ¾ of $6 = $4.50 and Cassidy has ½ of $6 = $3, and in total they have $4.50 + $3 = $7.50.
With $7.50, they could buy exactly 7.50 ÷ 3 = 2.5 sandwich deals at a price of $3 each.
Suppose the original price of the meal deal was $12. Then the reduced price would be $9. Also, Jared has 3/4 of $12 = $9 and Cassidy has ½ of $12 = $6, and in total they have $9 + $6 = $15. With $15, they could buy 15 ÷ 9 or about 1.67 sandwich deals at a price of $9 each.
Now we know that the sandwich deal lies somewhere **between $6 and $12.**
Let's suppose the original price of the sandwich deal was $8. Then the reduced price would be $5. Also, Jared has 3/4 of $8 = $6 and Cassidy has 1/2 of $8 = $4, and in total they have $6 + $4 = $10. With $10, they could buy exactly 10 ÷ 5 = 2 sandwich deals at a price of $5 each. Thus, we can see that the original price of the sandwich deal is $8.

Another way is to ***draw a model.***

If each sandwich deal was $3 cheaper, together they would have enough money to buy two. This means that 3 units stand for 2×$3 = $6.
1 unit is $2.
The original price of the sandwich deal is **4×$2 = $8**

One other way to solve it is using ***Algebra***:
Let C be the cost of the breakfast sandwich deal. Jared has ¾ C and Cassidy has ½ C. Combining their money, we have ¾ C + ½ C = 5/4 C. If the deal was $3 cheaper, then the cost to buy one deal was C – 3.
The cost to buy two deals would be 2(C – 3) = 2C – 6.
Combined, Jared and Cassidy would have enough money to buy exactly 2 sandwich deals.
$2C - 6 = \frac{5}{4}C$
$\frac{8}{4}C - \frac{5}{4}C = 6$
$\frac{3}{4}C = 6$ → 3C = 24 → C = 8. The original price must be **$8.**

Solution is available on April 21, 2023
www.mathinaction.org