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

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

Coins and Money Problems

Coin's name	Penny	Nickel	Dime	Quarter	Half Dollar	One Dollar
Value	1 cent	5 cents	10 cents	25 cents	50 cents	100 cents or $1.00
						

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.

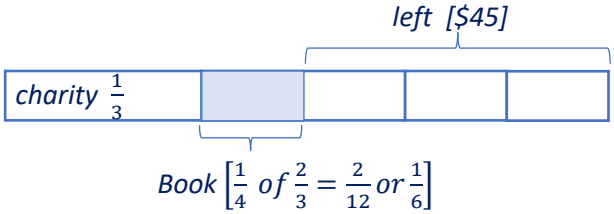
		Answer
1.	A nickel is a five-cent coin. 5 cents + 5 cents = 10 cents, which equal to 10 pennies.	*10 [pennies]*
2.	Count up by 5 until you reach 40 to find the number of nickels. Or 40÷5 = 8 nickels	*8 [nickels]*
3.	A gumball cost 25 cents or 5 nickels. The number of coins she has left = 7 – 5 = 2 coins left	*2 [coins left]*
4.	He gave the store keeper three quarters, which is 75 cents. The store keeper gave him 75 cents – 65 cents = 10 cents. Since he got 2 coins, the type of coins must be a nickel since it is a five-cent coin.	*Nickel*
5.	Let's think. 80 cents ÷4 is 20 cents. But there is no 20 cent coin, so he will have definitely three 25 cent coins and a nickel (5 cents). You can also guess and check until you arrive with a correct solution.	*3 quarters and 1 nickel*
6.	18 dimes = $1.80; 9 nickels = $0.45. Total value: $1.80 + $0.45 = $2.25. There are 9 quarters in $2.25.	*9 [quarters]*
7.	a. The smallest amount of coins Sonia has is pennies, then there are quarters, the biggest number of coins dimes. She has 6 coins in total, which means she has 1 penny, 2 quarters and 3 dimes. b. 1¢ + 2×25¢ + 3×10¢ = 81¢ = $0.81	*a. 2 quarters, 3 dimes and a penny* *b. 81 cents or 81¢ or $0.81*
8.	Work backwards: 50 + 25 = 75 cents. She had spent half of what she had and was left with 75 cents, so before this, she had $1.50. She gave half of what she had to her brother and was left with $1.50, therefore, she must have had $3. Or draw the model:  $0.75 is a quarter of her original amount, thus Monica had 4×$0.75 = $3 at first.	*[$]3*

9.	We can do 'guess and check' or 'make an organized list' of what is possible.	*30 [cents] or 30 [¢]*

10.	$3.15 ends on 5, the only way we can get 5 cents at the end is if Josiah has an odd number of quarters. We can make a list with possible number of quarters: • If Josiah has 3 quarters, the number of dimes on $3.15 - $0.75 = $2.40 would be 24. This will not work since we need more quarters than dimes. • If Josiah has 9 quarters, the number of dimes on $3.15 – $2.25 = $0.90 would be 9. There are the same number of quarters and dimes. • If Josiah has 11 quarters, the number of dimes on $3.15 - $2.75 = $0.40 would be 4. We have more quarters than dimes. Therefore, the least number of quarters is 11. Another way: $3.15 ends on 5, the only way we can get 5 cents at the end if Josiah has odd number of quarters. The largest odd number of quarters that fits the sum is 11. $3.15- 11×$0.25 = $0.40, or 4 dimes left. 11 > 4 it works. Let's check the smaller number of quarters, 9. $3.15 – 9×$0.25 = $0.90 or 9 dimes. In this case, number of quarters equals to the number of dimes. So, the least number of quarters that work is 11.	*11 [quarters]*

11.	We can do 'guess and check' or 'make an organized list' of what is possible. A football costs $11 each and a helmet costs $18 each. Another way to solve it using pictures:  = $40 = $47 When we add of the two equations together, we'll get that 3 sets of (football and helmet) costs $87, so 1 set (helmet + football) cost $87÷3 = $29 The cost a football $40 = $29 = $11 The cost of a helmet $47 - $29 = $18	*Football: $11* *Helmet: $18*

12.	The number of hours he worked = $1152 ÷ 12 = 96 hours. February has 28 or 29 days in total. If we subtract 4 Sundays, we'll get 24 or 25 working days. Possible number of hours work each day: 3×24 days = 72 hours, 4 hours for 24 days = 96 hours. Only 4 hours for 24 fit the conditions. 	*4 [hours per day]*

13.	One way to solve is to draw a diagram.  The fraction of what's left = $1 - \frac{1}{3} - \frac{1}{6} = \frac{1}{2}$ Since the fraction $\frac{1}{2}$ represents $45, the original amount must be $90. Another way: From the picture with the book, you had $60, which was 2/3, so at first you had $90.	*[$]90*

14.	One nickel and one dime have a total value of 15¢. $6 = 600¢; 600¢ is divisible by 15¢, which results in 40. Therefore, there were 40 nickels (and 40 dimes). Another way: A set of 10 dimes and 10 nickels is worth $1.50. Four such sets are worth $6.00. So, there are 40 nickels and 40 dimes in the $6.00.	*40 [nickels]*
15.	Let m = the cost of a mango and b = the cost of a banana. 2m + 3b = 5.60. So, twice the number of fruits will be 4m + 6b = 11.20 We are given that 4m + 7b = 11.60. Comparing the two equations (4m + 6b = 11.20 and 4m + 7b = 11.60) tells us that one banana costs 11.60 – 11.20 = $0.40 Two mangoes and three bananas cost $5.60. Since we know a banana cost $0.40, then a mango costs (5.60 –0.40×3)÷2 = $2.20. One mango and five bananas will cost $2.20 + 5 x $0.40 = $4.20.	*[$]4.20*
16.	If 7/8 of Geena's money equals to $2.80, that means 1/8 of Geena's money must equal to $2.80 ÷ 7 = $0.40. Therefore, the total amount of her money (8/8) is $0.40 x 8 = $3.20. Since Geena had $1.20 more than Ben, then Ben must have had $3.20 - $1.20 = $2.00. The pen cost: ¼ x $2.00 = $0.50. Thus, Ben had $2.00 - $0.50 = $1.50 left.	*[$]1.50*
17.	Based on her specific wants, she would have this set of coins: 1 quarter, 2 dimes, 4 nickels. The value of this set is 65 cents. Since the value of the exchange set is 455 cents, she will get 455/65 = 7 sets. Since each set contains 1 quarter, therefore the exchange set contained 7 quarters.	*7 [quarters]*
18.	Notice that the largest amount that can be made is 49 cents. If you experiment with the given set of coins, any amount from 1 cent to 49 cents can be made. Therefore, there are 49 different amounts that can be made.	*49 [different amounts]*

Solution is available on March 4, 2022, at www.mathinaction.org