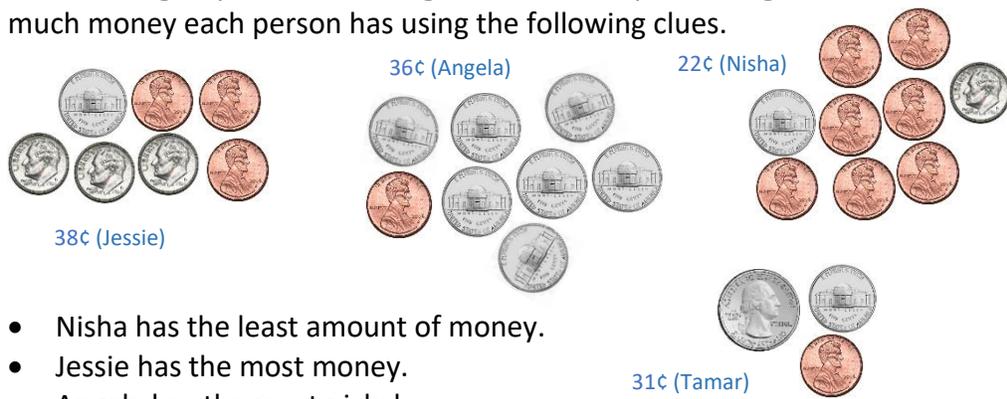


Math Challenge #1

MC 1 Solutions Money

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

<p>1. Kelly got some coins from her grandfather, but she has some problem counting how many coins she has. Please help her count and find out the number of coins she got.</p>		<p>13 [coins]</p>
<p>2. Lara knows that each nickel worth 5 cents and each penny worth 1 cent. Lara has 2 nickels and 2 pennies. How much money (in cents) does she have? $5\text{¢} + 5\text{¢} + 1\text{¢} + 1\text{¢} = 12\text{¢}$</p>		<p>12¢</p>
<p>3. Gina had some pennies. She lost 3 of them. She now has only 8 cents. How much money (in cents) did she have before she lost some of her pennies? $8\text{¢} + 3\text{¢} = 11\text{¢}$</p>		<p>11¢</p>
<p>4. Kavin has exactly 4 coins. The value of his coins is 40 cents. If three of his coins are nickels, what is the remaining coin? $40\text{¢} - 5\text{¢} - 5\text{¢} - 5\text{¢} = 25\text{¢}$ (a quarter)</p>		<p>A quarter</p>
<p>5. Four students (Jessie, Angela, Nisha, and Tamar) placed their coins on the table. Each group of coins belongs to a different person. Figure out how much money each person has using the following clues.</p> <ul style="list-style-type: none"> Nisha has the least amount of money. Jessie has the most money. Angela has the most nickels. 		<p>Angela: 36¢ Jessie: 38¢ Nisha: 22¢ Tamar: 31¢</p>
<p>6. A mango cost \$1 each. An avocado cost 90 cents. Pete bought 5 mangoes and 3 avocados. How much did he pay for those fruits? $5 \text{ mangoes} = \\$1 \times 5 = \\5 $3 \text{ avocados} = 90 \text{ cents} \times 3 \text{ or } 90\text{¢} + 90\text{¢} + 90\text{¢} = 270 \text{ cents or } \\2.70. In total he paid $\\$5 + \\$2.70 = \\$7.70$</p>		<p>\$7.70</p>

7. Four students donate their allowances for the week to a local hospital. Tashia, Cam, Rick, and Kamia brought the money to school in an envelope, but they forgot to put their names on the envelopes. Figure out how much money each person brought using the following clues.

- Tashia donates the most money.
- Kamia donates 15¢ more than Rick.



\$3.75 (Kamia)



\$3.15 (Cam)



\$4.05 (Tashia)



\$3.60 (Rick)

Tashia: \$4.05

Cam: \$3.15

Rick: \$3.60

Kamia: \$3.75

8. Josiah and Mary have the same amount of money at first. Then Josiah received \$7.50 from his mother while Mary spent \$7.50 for a pen. How much more money does Josiah have than Mary now?

\$15.00

$$\$7.50 + \$7.50 = \$15.00$$

9. Raunak saves three quarters in the first month, four quarters in the second month, five quarters in the third months, and so on. How much money, in dollars, will he save up in 6 months?

\$8.25

$$(25¢ + 25¢ + 25¢) + (25¢ + 25¢ + 25¢ + 25¢) + (25¢ + 25¢ + 25¢ + 25¢ + 25¢) + (25¢ + 25¢ + 25¢ + 25¢ + 25¢ + 25¢) + (25¢ + 25¢ + 25¢ + 25¢ + 25¢ + 25¢ + 25¢) + (25¢ + 25¢ + 25¢ + 25¢ + 25¢ + 25¢ + 25¢ + 25¢) = \$8.25$$

Or you can use multiplication:

$$(25¢ \times 3) + (25¢ \times 4) + (25¢ \times 5) + (25¢ \times 6) + (25¢ \times 7) + (25¢ \times 8) = 825¢ = \$8.25$$

10. Amy has two coins. Will has three coins. Both have the same amount of money. Neither of Amy's coins matches any of Will's coins. What are the coin combinations, and how much money does each person have?

Amy: 25¢ 5¢

Will: 10¢ 10¢ 10¢

Each has 30¢

Amy: ○ ○ = ____¢

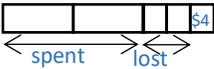
Will: ○ ○ ○ = ____¢

11. In her piggy bank, Caitlin has \$5.24. The sum is made up of an equal number of four coins from 1¢, 5¢, 10¢, 25¢, 50¢, and \$1. Which four coins does she have?

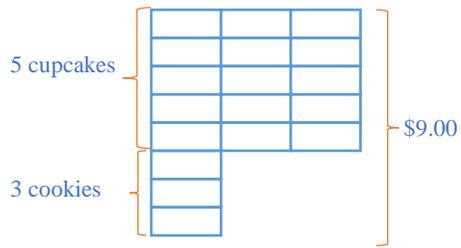
Four coins of \$1, 25¢, 5¢, 1¢

Make an organized list or table. Four each of \$1, 25¢, 5¢, 1¢.

or $\$5.24 = 524¢$ which is made of 4 identical groups of coins. $524¢ \div 4 = 131¢$ is made out of 1 group of coins, where each coin is used once. $131¢ = 100¢ + 25¢ + 5¢ + 1¢ = \$1 + \text{quarter} + \text{nickel} + \text{penny}$

12.	<p>A dollar was changed into 14 coins and consisting of just nickels and dimes. How many coins of each kind were in the change? Suppose all 14 coins were nickels, then their total value would be $14 \times 5 = 70\text{c}$. This is 30 cents short of the desired total value of \$1. The difference of the value between dime and nickel is 5c. $30 \div 5 = 6$ coins. We can exchange 6 nickels for 6 dimes thus increase the value by 30c. That makes the change consist of 8 nickels and 6 dimes. Check: $(8 \text{ nickels}) \times 5\text{c} + (6 \text{ dimes}) \times 10\text{c} = 100\text{c} = \\1</p>	<i>8 nickels and 6 dimes</i>
13.	<p>Cassidy spent two-thirds of her money. She then lost two-thirds of the remainder and then had \$4 left. How much money did she start at first? Draw the diagram</p>  <p>$\\$4 \times 3 = \\12 is the remainder $\\$12 \times 3 = \\36 Cassidy had at first</p>	\$36
14.	<p>Dasha spent \$21.45 on 11 pounds of fruit. If she bought two kinds of fruit in whole pounds, which ones did she buy? Find out the amount of each fruit she bought (in pounds).</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>\$3.15 a pound</p> </div> <div style="text-align: center;">  <p>\$1.95 a pound</p> </div> <div style="text-align: center;">  <p>\$1.50 a pound</p> </div> </div> <ol style="list-style-type: none"> Let's pretend she bought cherries. If she bought 11 pounds of cherries, she would have paid \$34.65, which is $\\$34.65 - \\$21.45 = \\$13.20$ more than she actually paid for two fruits. Let's try the second choice of fruit grapes. The difference in price between cherries and grapes is $\\$3.15 - \\$1.95 = \\$1.20$. $\\$13.20 \div \\$1.20 = 11$ lb. of grapes, it means she bought just grape, not the cherries. If she bought cherries and peaches. The difference between their price is $\\$3.15 - \\$1.50 = \\$1.65$. $\\$13.20 \div \\$1.65 = 8$ lb. of peaches, 3 pounds of cherries. <p>Check: $8\text{lb.} \times \\$1.50 + 3\text{lb.} \times \\$3.15 = \\$12 + \\$9.45 = \\$21.45$</p>	<p><i>Peaches and Cherries</i></p> <p><i>Peaches: 8 pounds Cherries: 3 pounds</i></p>
15.	<p>Frank bought a folder and a notebook. The notebook cost 7 times as much as the folder. He paid \$3.60 more for the notebook than the folder. How much did he spend on both the notebook and the folder?</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">Folder</div> <div style="margin-right: 20px;"></div> <div style="margin-right: 20px;">$\\$3.60$</div> <div>Each unit is $\\$3.60 \div 6 = \\0.60</div> </div> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">Notebook</div> <div></div> <div>Folder = $\\$0.60$</div> </div> <div style="margin-left: 200px;">Notebook: $7 \times \\$0.60 = \\4.20</div> <div style="margin-left: 200px;">Notebook + Folder = $\\$4.20 + \\$0.60 = \\$4.80$</div>	\$4.80
16.	<p>One orange and one apple cost \$1.05. Two oranges and three apples cost \$2.75. Anita wants to buy two apples. How much will it cost? One way to solve it is using the 'guess n check' method. Another way is to solve it picture/algebraic way.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> +  = \$1.05</div> <div style="margin-right: 20px;"> +  +  +  +  = \$2.75</div> </div> <p>But $2 \times (\text{Orange} + \text{Apple}) = \\2.10 $\\$2.10$</p> <p>The cost of 1 apple is $\\$2.75 - \\$2.10 = \\$0.65$. Two apples will cost \$1.30</p>	\$1.30
17.	<div style="display: flex; align-items: center;">  <p>Mary goes to Stuff and Beyond to get a new coffee maker. She likes the simple one that was priced at \$29.00. She has a \$5 coupon and a 20% off coupon with her; but she can only use one of them. Which one should she use so she has the best deal?</p> </div> <ol style="list-style-type: none"> $\\$29 - \\$5 = \\$24$ if she uses \$5 coupon $0.8 \times \\$29.00 = \\23.20 if she uses 20% off coupon. This is a better deal as it saves additional \$0.80 	20% off

18. Kendall paid \$9 for 3 cookies and 5 cupcakes. A cupcake cost three times as much as a cookie. Find the cost of one cupcake. **\$1.50**



$$\frac{900 \text{ cents}}{5 \times 3 + 3} = 50 \text{ cents per 1 unit}$$

Each cookie cost 50 cents.

Each cupcake cost 50 cents x 3 = \$1.50

Solution is available on October 11, 2019 at www.mathinaction.org