Money

Coins: There are six different coins that we use for our money system. The dollar coin

and 50 cent coin are not commonly used. The four coins commonly used and the amount they are worth are shown here:

Nickel: 5 cents
$0.05

Penny: 1 cent
$0.01

Quarter: 25 cents
$0.25

Dime: 10 cents
$0.10

Bills: Currently U.S. dollar banknotes are only issued in seven denominations: $1, $2, $5, $10, $20, $50, and $100.

When **making change** with the fewest coins or **counting** money it helps to start with the coin worth the most money and add until you get to the least worth coin. It is a good idea to count bills in the same manner.

Count the amount of money shown in the picture:

Total amount: 1, 2, 2.50, 3, 3.25, 3.50, 3.60, 3.70, 3.75, 3.80, 3.81, 3.82. $3.82

Answer the following questions: How many different ways could you give a customer the correct change of $0.63 using only quarters, dimes, nickels and pennies? Write down at least 10 different ways.

2 quarters, 1 dime, 3 pennies	2 quarters, 1 nickel, 8 pennies	63 pennies
2 quarters, 2 nickels, 3 pennies	2 quarters, 13 pennies	1 nickel, 58 pennies
2 nickels, 53 pennies	3 nickels, 48 pennies	4 nickels, 43 pennies
5 nickels, 38 pennies	6 nickels, 33 pennies	7 nickels, 28 pennies
8 nickels, 23 pennies	9 nickels, 18 pennies	10 nickels, 13 pennies
11 nickels, 8 pennies	12 nickels, 3 pennies	1 dime, 5 nickels, 28 pennies
1 dime, 10 nickels, 3 pennies	1 dime, 9 nickels, 8 pennies	1 dime, 6 nickels, 23 pennies
1 dime, 8 nickels, 13 pennies	1 dime, 7 nickels, 18 pennies	1 dime, 4 nickels, 33 pennies
1 dime, 3 nickels, 38 pennies	1 dime, 2 nickels, 43 pennies	1 dime, 1 nickel, 48 pennies
1 dime, 53 pennies	2 dimes, 43 pennies	2 dimes, 1 nickel, 38 pennies
2 dimes, 2 nickels, 33 pennies	2 dimes, 3 nickels, 28 pennies	2 dimes, 4 nickels, 23 pennies
2 dimes, 5 nickels, 18 pennies	2 dimes, 6 nickels, 13 pennies	2 dimes, 7 nickels, 8 pennies
2 dimes, 8 nickels, 3 pennies	1 quarter, 3 dimes, 8 pennies	etc…..

Which way uses the least amount of coins?
2 quarters, 1 dime, 3 pennie

Discuss your responses with a partner. Explain how you decided on your answer. Make any adjustments that are needed to your answers above.

Making Change

There are two methods to make change:
1. Subtract the purchase price from the amount paid. Give customer the difference.
2. Count up from the purchase price to the amount paid.

Explain what was done in each step of the following problem: A customer paid $20.00 for a $13.82 purchase. What change should they be given back?

METHOD 1

1. 20.00   Subtract purchase price from the amount paid
-   13.82
     6.18

2. Hand the customer a $5 bill $5 + $1 = $6.00
    and a $1 bill.

3. Hand the customer 1 dime, $0.10 + $0.05 + $0.03 = $0.18
    1 nickel and 3 pennies.

METHOD 2

1. Hand the customer 3 pennies.   Count up from purchase price...
    Say " 13.82, .83, .84, and .85"

2. Hand the customer a nickel. $13.85 + $0.05 = $13.90
    Say "13.90"

3. Hand the customer a dime. $13.90 + $0.10 = $14.00
    Say "14".

4. Hand the customer a $1 bill. $14.00 + $1.00 = $15.00
    Say "15".

5. Hand the customer a $5 bill. $15.00 + $5.00 = $20.00 You have given the
    Say "and 20".   correct change once you have reached the amount
                                        they have given you.

Write the amount of bills and coins to give the following amounts with the fewest possible bills and coins:

1. $13.87
   1 ten, 3 ones,
   3 quarters, 1 dime, 2 pennies

2. $51.48
   2 twenties, 1 ten, 1 one
   1 quarter, 2 dimes, 3 pennies

3. $20.20
   1 twenty, 2 dimes

4. $4.76
   4 ones, 3 quarters, 1 penny

Determine the amount of money that should be given back to the customer:

1. Purchase: $14.72
   Paid: $20.75
   3 pennies, 1 one, 1 five
   $6.03

2. Purchase: $3.59
   Paid: $5.00
   1 penny, 1 nickel, 1 dime, 1 quarter, 1 dollar
   $1.41

3. Purchase: $25.03
   Paid: $30.05
   2 pennies, 1 five
   $5.02

4. Purchase: $1.19
   Paid: $1.25
   1 penny, 1 nickel
   $0.06

Solve the following problems (show all of your work):

1. A customer bought a cup of coffee that cost $1.36. She hands you $2 then gives you a penny. How much should you give her back?
   4 pennies, 1 dime, 2 quarters
   $0.64

2. Being a struggling actress, money is not plentiful. You scrape together your last coins to pay for a coke that costs $1.06. If you only have dimes, nickels and pennies what different combinations would pay for the coke?
   4 quarters, 1 nickel, 1 penny   4 quarters, 6 pennies   3 quarters, 3 dimes, 1
   penny   3 quarters, 2 dimes, 2 nickels, 1 penny   3 quarters, 2 dimes, 1 nickel,
   6 pennies   3 quarters, 1 dime, 4 nickels, 1 penny   3 quarters, 1 dime, 3 nickels,
   6 pennies   3 quarters, 1 dime, 2 nickels, 11 pennies   3 quarters, 1 dime, 1 nickel,
   16 pennies   3 quarters, 1 dime, 21 pennies   2 quarters, 5 dimes, 1 nickel, 1
   penny   2 quarters, 5 dimes, 6 pennies   2 quarters, 4 dimes, 3 nickels, 1
   penny   2 quarters, 4 dimes, 2 nickels, 6 pennies   2 quarters, 4 dimes, 1 nickel,
   11 pennies   2 quarters, 4 dimes, 16 pennies   2 quarters, 3 dimes, 5 nickels, 1

3. A client owes you $53.76. They hand you one $10 bill, one $20 bill, thirteen $1 bills, a $5 bill and a penny. Did they pay enough? If yes, how much change do you owe them? If no, how much more do they still need to pay?

They have given you a total of $48.01. They have not paid enough. They still owe $5.75.