

Using Mental Math with Money

In many countries, the main unit of money is divided into 100 parts, and the smaller units are called “cents”. The word “cent” comes from the Latin word *centisimus* which means a hundredth part.

Cents are **hundredth parts** of the main money unit (such as dollar). That is why one dollar has 100 cents. For example, \$14.59 means 14 whole dollars, and 59 hundredths of a dollar (59 cents).

1. Fill in the pattern of multiples of 25 cents (quarters).

- | | | | |
|------------------------|------------------------|------------------------|-------------------------|
| a. $1 \times \$0.25 =$ | b. $5 \times \$0.25 =$ | c. $9 \times \$0.25 =$ | d. $13 \times \$0.25 =$ |
| $2 \times \$0.25 =$ | $6 \times \$0.25 =$ | $10 \times \$0.25 =$ | $14 \times \$0.25 =$ |
| $3 \times \$0.25 =$ | $7 \times \$0.25 =$ | $11 \times \$0.25 =$ | $15 \times \$0.25 =$ |
| $4 \times \$0.25 =$ | $8 \times \$0.25 =$ | $12 \times \$0.25 =$ | $16 \times \$0.25 =$ |

2. Fill in the patterns.

a. $1 \times \$0.75 =$	b. $5 \times \$0.75 =$	c. $1 \times \$1.50 =$	d. $1 \times \$3.50 =$
$2 \times \$0.75 =$	$6 \times \$0.75 =$	$2 \times \$1.50 =$	$2 \times \$3.50 =$
$3 \times \$0.75 =$	$7 \times \$0.75 =$	$3 \times \$1.50 =$	$3 \times \$3.50 =$
$4 \times \$0.75 =$	$8 \times \$0.75 =$	$4 \times \$1.50 =$	$4 \times \$3.50 =$

3. Find the total cost. Use mental math.

a. three lollipops for \$0.60 each	b. four newspapers for \$1.12 each
c. five cans of juice for \$1.10 each and five sandwiches for \$0.90 each	d. seven pencils for \$0.20 each and three notebooks for \$1.20 each

4. a. A pencil costs \$0.45, an eraser \$0.30, and a pencil sharpener \$0.30.
What is the total cost of all three?

You paid for the purchase with \$5. What was your change?

b. You bought three cups of coffee for \$1.25 each. What was the total cost? What was your change from \$5?

Mental math ideas

- 1) $7 \times \$8.99$. Since $\$8.99$ is just one cent less than $\$9$, first calculate $7 \times \$9$, and subtract from that $7 \times 1\text{¢}$. The result is \$ _____
- 2) $6 \times \$4.05$. Multiply dollars and cents separately: $6 \times \$4$ and $6 \times 5\text{¢}$. The total is \$ _____
- 3) $4 \times \$3.25$. Multiply dollars first. With cents, remember $4 \times 25\text{¢}$ is $\$1$. The total is \$ _____
- 4) $5 \times \$6.25$. Multiply $5 \times \$6$ first. $4 \times 25\text{¢}$ is $\$1$, so $5 \times 25\text{¢}$ is $\$1.25$. The total is \$ _____
- 5) $2 \times \$1.75$. Multiply in parts. Remember $2 \times 75\text{¢}$ is $\$1.50$. The total is \$ _____

5. Multiply mentally and find the total cost.

- a. four cups of coffee for $\$1.50$ each
- b. eight avocados for $\$1.99$ each
- c. six balls for $\$5.25$ each
- d. seven magazines for $\$2.06$ each

6. Which is cheaper: to buy 20 blank CDs individually for $\$0.99$ apiece, or to buy two sets of 10 CDs for $\$9.95$ a set? Use mental math techniques.

7. John has $\$20$, and he wants to buy six pairs of socks for $\$2.95$ each.

- a. Estimate his bill by rounding the cost.
- b. Calculate the exact bill. Use mental math techniques.
- c. Find his change.

8. (Optional) For this exercise, you will need a receipt from a grocery store, with several food items on it. Take the receipt, and imagine you are going through the store, picking up the various items on the list. *Estimate* the cost of each item, and add the estimated prices as you go. See the example.

How close does your estimated total come to the actual total shown on the receipt?

Example:

tomatoes $\$0.45$
cucumber $\$0.19$
butter $\$2.35$
eggs $\$2.57$
honey $\$3.89$
celery $\$1.03$

total $\$10.48$

estimation
→

tomatoes $\$0.50$
cucumber $\$0.20$ (<i>sum 0.70</i>)
butter $\$2$ (<i>sum 2.70</i>)
eggs $\$2.50$ (<i>sum 5.20</i>)
honey $\$4$ (<i>sum 9.20</i>)
celery $\$1$ (<i>sum 10.20</i>)

estimated total $\$10.20$