



## What Is This Module About?

Numbers are part of daily life. When you go to the market, you need to know the total number of items you've bought. When you ride a bus, you need to know how much change you'll get for a twenty-peso bill. At home, you need to know how many cups of water you have to boil for every pack of noodles.

In this module, you will learn about elementary mathematics, specifically addition and subtraction. You will learn why these basic operations are important in every day activities.

This module is divided into three lessons:

Lesson 1 – *The Place-Value Numeration System*

Lesson 2 – *Addition in Every Day Life*

Lesson 3 – *Subtraction in Every Day Life*



## What Will You Learn From This Module?

After studying this module, you should be able to:

- ◆ recognize numbers;
- ◆ differentiate a digit and a number;
- ◆ identify the place value of a digit in a given number;
- ◆ add whole numbers up to three digits;
- ◆ subtract whole numbers up to three digits; and
- ◆ apply your knowledge of addition and subtraction to solve daily problems.



## Let's See What You Already Know

Before studying this module, answer the items below to determine how much you already know.

Write the letter of the correct answer in the blank before each number.

- \_\_\_\_ 1. How many digits does the number 3456 have?
- a. 2
  - b. 3
  - c. 4
  - d. 5
- \_\_\_\_ 2. What is the value of the digit 4 in the number 456?
- a. 4 ones or four
  - b. 4 tens or forty
  - c. 4 hundreds or four hundred
  - d. 4 one thousands or four thousand
- \_\_\_\_ 3. In which number does 8 have the greatest value?
- a. 8 ones
  - b. 8 tens
  - c. 8 hundreds
  - d. 8 thousands
- \_\_\_\_ 4. What is five plus four?
- a. four
  - b. five
  - c. nine
  - d. forty-five
- \_\_\_\_ 5. What is the total of 15 and 8?
- a. 16
  - b. 20
  - c. 23
  - d. 30

- \_\_\_\_\_ 6. Jessie and Jamie rode a bus. Jessie's fare is 9 pesos, while Jamie's fare is 18 pesos. How much do they have to pay in all?
- a. 24 pesos
  - b. 25 pesos
  - c. 26 pesos
  - d. 27 pesos
- \_\_\_\_\_ 7. Aling Mila wants to buy some fruits for her children. She plans to buy 5 oranges, 7 apples and 9 mangoes. How many fruits will she have in all?
- a. 21 fruits
  - b. 57 fruits
  - c. 59 fruits
  - d. 79 fruits
- \_\_\_\_\_ 8. What is 9 minus 2?
- a. 11
  - b. 7
  - c. 29
  - d. 92
- \_\_\_\_\_ 9. There are 17 storybooks in the library. If someone borrowed eight storybooks, how many would be left?
- a. 10
  - b. 9
  - c. 8
  - d. 7
- \_\_\_\_\_ 10. Mang Raul bought 12 cavans of rice. He gave 5 cavans to his sister, 4 to his brother and 3 to his neighbor. How many cavans of rice were left?
- a. 5
  - b. 4
  - c. 3
  - d. 0

Well, how was it? Do you think you fared well? Compare your answers with those in the *Answer Key* on page 45 to find out.

If all your answers are correct, very good! This shows that you already know much about the topics in this module. You may still study the module to review what you already know. Who knows, you might learn a few more new things as well.

If you got a low score, don't feel bad. This means that this module is for you. It will help you understand some important concepts that you can apply in your daily life. If you study this module carefully, you will learn the answers to all the items in the test and a lot more! Are you ready?

You may now go to the next page to begin Lesson 1.

## The Place-Value Numeration System

Numbers, numbers, numbers... They are everywhere. You encounter them when you ask for your change. You encounter them when you're in the market. You use them at home and at work.

When you see a number, do you know the value of each digit in the number? For example, do you know the value of the digit 6 in the number 46? What about the value of the digit 9 in the number 967?

In this lesson you will learn about the *place-value numeration system*. You will learn the value of each digit in a given number. This is a very important concept to learn before you study addition and subtraction.

After studying this lesson, you should be able to:

- ◆ differentiate a digit and a number; and
- ◆ identify the value of a digit in a given number.



### Let's Try This

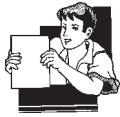
You may be wondering what the difference is between a digit and a number.

Well, a **digit** is simply an individual part of a number. You may have a three-digit number, like 245. The digits of the number 245 are 2, 4 and 5. A **number**, on the other hand, is the total representation of how many or how much something is. It may be composed of one or more digits.

Try doing the following exercises:

1. How many digits does the number 12345 have? \_\_\_\_\_
2. What are the digits of 678? \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_

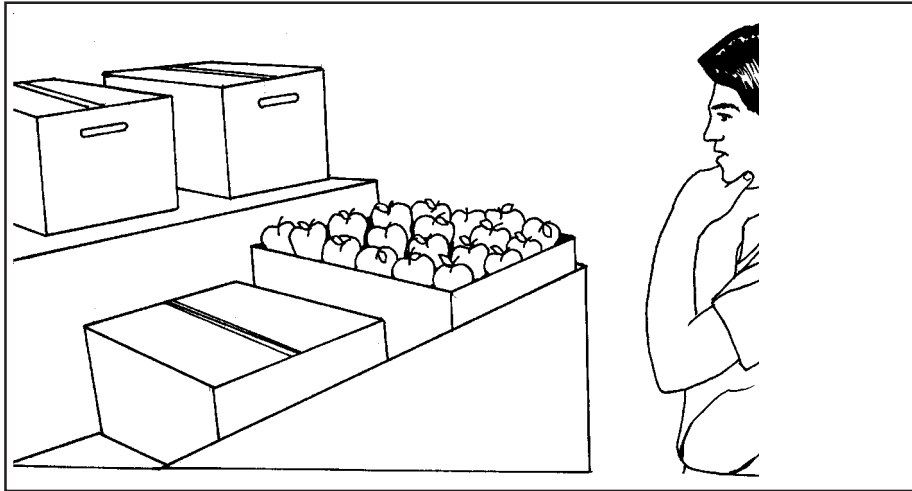
If your answer is "5" in the first item, you are correct! The answers on the second item are 6, 7 and 8. Were you able to answer them correctly?



## Let's Learn

Read the following.

Mang Lino saw boxes of apples in a store. Each box contains **6** apples. If Mang Lino buys 10 boxes, he'll have **60** apples. If he buys 100 boxes, he'll have **600** apples. With 1000 boxes, Mang Lino will have **6000** apples! That's a lot of apples!



In the situation above, the digit 6 was used many times. The digit **6** had a different value each time.

The value of a digit in a number depends on its place in the number. Look at the chart below.

	Thousands			Units		
	Hundreds	Tens	Ones	Hundreds	Tens	Ones
(a)						<b>6</b>
(b)					<b>6</b>	0
(c)				<b>6</b>	0	0
(d)			<b>6</b>	0	0	0

The chart shows two periods: the units and the thousands.

Let us look closer at each place.

In row (a), the digit 6 is in the ones place of the units period. So, its value is 6 ones or 6.

In row (b), the digit 6 is in the tens place of the units period. So, its value is 6 tens or 60.

In row (c), the digit 6 is in the hundreds place of the units period. So, its value is 6 hundreds or 600.

In row (d), the digit 6 is in the ones place of the thousands period. So, its value is 6 one thousands or 6000.

Look at this chart:

Thousands			Units		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
7	0	5	3	0	0

The value of a digit depends on its place in the number. The value of 6 in the thousands period is different from the value of 6 in the units period. This is why this system of writing numbers is called a *place-value numeration system*.

Let's find out how each digit got its value by using the place value chart above.

- ◆  $7 \times 100000 = 700000$
- ◆  $5 \times 1000 = 5000$
- ◆  $3 \times 100 = 300$

Zeros in the thousands and units periods are used as place holders but they are not read and have no value.

In expanded form, 705300 is equal to:

$$700000 + 5000 + 300$$

$$\text{or } (7 \times 100000) + (5 \times 1000) + (3 \times 100)$$

Notice that the value of each digit is equal to the digit times its place value.

When numbers are read, each period is read at a time. Reading starts from the left. So, the number in the chart above is read as seven hundred five thousand three hundred.



## Let's Try This

Study the following pairs of numbers. In each pair, indicate where 9 has a greater value. Put a check mark (✓) on the blank beside that number. You may write the number words in figures to help you do this activity.

- a. \_\_\_ 9 hundred                      \_\_\_ 90 ones  
b. \_\_\_ 90 hundred                    \_\_\_ 90 thousand  
c. \_\_\_ 9 hundred                      \_\_\_ 9 thousand  
d. \_\_\_ 9 tens                            \_\_\_ 900 ones  
e. \_\_\_ 90 ones                          \_\_\_ 90 hundred

Compare your answers with those in the *Answer Key* on page 45.



## Let's See What You Have Learned

1. Tell how many digits each number has. Write your answer on the blank before the letter. Then, write down the digits of each number in the box after the number.

- \_\_\_ a. 267
- \_\_\_ b. 765432
- \_\_\_ c. 3198

2. What is the value of the digit 2 in the following numbers? Write your answer in the blank before the number.

- a. \_\_\_\_\_ 12 567
- b. \_\_\_\_\_ 425
- c. \_\_\_\_\_ 8 902
- d. \_\_\_\_\_ 289 540
- e. \_\_\_\_\_ 87 214



3. Look at each pair of numbers below. For each pair, place a check mark (**4**) before the number where the digit 4 has the greater value. The first one has been done for you.

- a.  245                       425
- b.  4356                       3456
- c.  42                               24
- d.  4297                       9247

Compare your answers with those in the *Answer Key* on pages 45–46.



## Let's Remember

In this lesson, you learned that:

- ◆ **Place value** is the value given to a digit based on the place it occupies in the number relative to the units place.
- ◆ A **digit** is a part of a number, which is between 0 and 9.
- ◆ The value of each digit is equal to the digit times its place value.
- ◆ Zeros are place holders – they represent a place but they are not read and have no value.

## Addition in Every Day Life

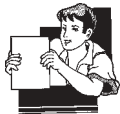
If you have five pieces of paper and your friend has three, how many pieces of paper are there in all?

If you go to the market and buy 4 oranges and 3 apples, how many fruits do you have in all?

These are few of the questions that show how numbers are part of every day life. The questions make use of a basic mathematical operation: addition.

After studying this lesson, you should be able to:

- ◆ add whole numbers up to three digits; and
- ◆ apply your knowledge of addition to solve daily problems.

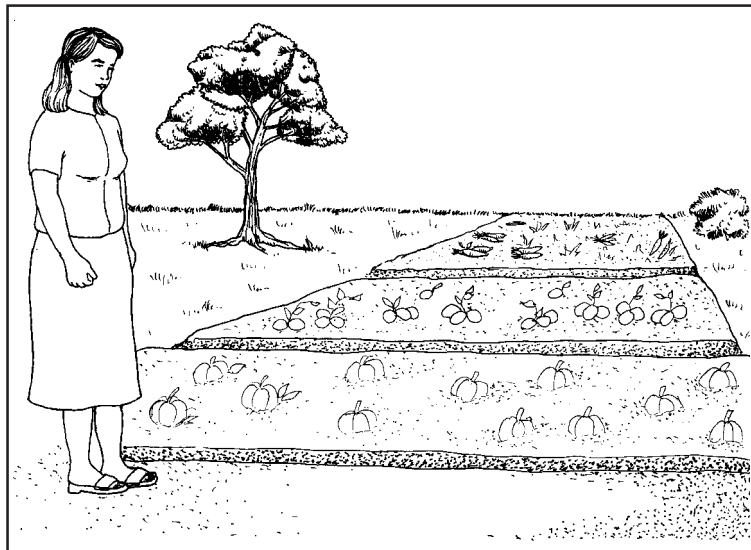


### Let's Learn

Let's learn how to add 2- to 3-digit numbers without regrouping.

Mrs. Leonida has three plots of vegetables. She harvested 32 carrots from one plot. She got 31 potatoes from another plot. From the third plot, she got 24 squashes. Mrs. Leonida wanted to know how many vegetables she harvested in all.

This is how she found out. She added the number



of vegetables harvested using the expanded form.

$$\begin{array}{r} \text{tens} \quad \text{ones} \\ \text{addends} \left\{ \begin{array}{l} 32 = 30 + 2 \\ 31 = 30 + 1 \\ 24 = 20 + 4 \\ \hline 80 + 7 \end{array} \right. \\ \text{sum} \longrightarrow = 87 \end{array}$$

Let's have another example. What is the sum of 250 and 136?

$$\begin{array}{r} \text{addends} \left\{ \begin{array}{l} 250 = 200 + 50 + 0 \\ 136 = 100 + 30 + 6 \\ \hline = 300 + 80 + 6 = 386 \end{array} \right. \\ \text{sum} \longrightarrow = 386 \end{array}$$

Notice that in addition, the number to be added are called **addends**. The answer is called the **sum**.

Notice also that in adding the expanded form, the addends are broken down into the value of each digit before performing addition.



## Let's Try This

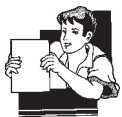
Find the sum of the following using the method used by Mrs. Leonila, the expanded form. Show your solution in the box provided for each item.

a. 
$$\begin{array}{r} 24 \\ + 25 \\ \hline \end{array}$$

$$\begin{array}{r} + 156 \\ \hline \end{array}$$

c. 
$$\begin{array}{r} 512 \\ 221 \\ + 135 \\ \hline \end{array}$$

Compare your answers with those in the *Answer Key* on page 46.



## Let's Learn

There is another way of finding the sum or total of the vegetables Mrs. Leonida harvested. The short method was used by her neighbor, Mr. Galeon.

$$\begin{array}{r} 32 \\ 31 \\ + 24 \\ \hline \end{array}$$

Step 1

Step 2

Step 3

Write the addends in column form	Add the ones	Add the tens
$\begin{array}{r} 32 \\ 31 \\ + 24 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ 31 \\ + 24 \\ \hline 7 \end{array}$	$\begin{array}{r} 32 \\ 31 \\ + 24 \\ \hline 87 \end{array}$

Let's also have an example with 3-digit addends. Find the sum of 250 and 136.

Step 1	Step 2	Step 3	Step 4
Write the addends in column form	Add the ones	Add the tens	Add the hundreds
$\begin{array}{r} 250 \\ + 136 \\ \hline \end{array}$	$\begin{array}{r} \downarrow \\ 250 \\ + 136 \\ \hline 6 \end{array}$	$\begin{array}{r} \downarrow \\ 250 \\ + 136 \\ \hline 86 \end{array}$	$\begin{array}{r} \downarrow \\ 250 \\ + 136 \\ \hline 386 \end{array}$

The sum of 250 and 136 is 386.



## Let's Try This

Find the sum of the following using the method used by Mr. Galeon, the short method. Show your solution for each item. The first one has been done for you.

Solution:

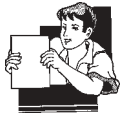
a. 
$$\begin{array}{r} 33 \\ + 95 \\ \hline \end{array}$$

$$\begin{array}{r} 33 \\ + 95 \\ \hline 128 \end{array}$$

b. 
$$\begin{array}{r} 247 \\ + 532 \\ \hline \end{array}$$

c. 
$$\begin{array}{r} 42 \\ 33 \\ + 84 \\ \hline \end{array}$$

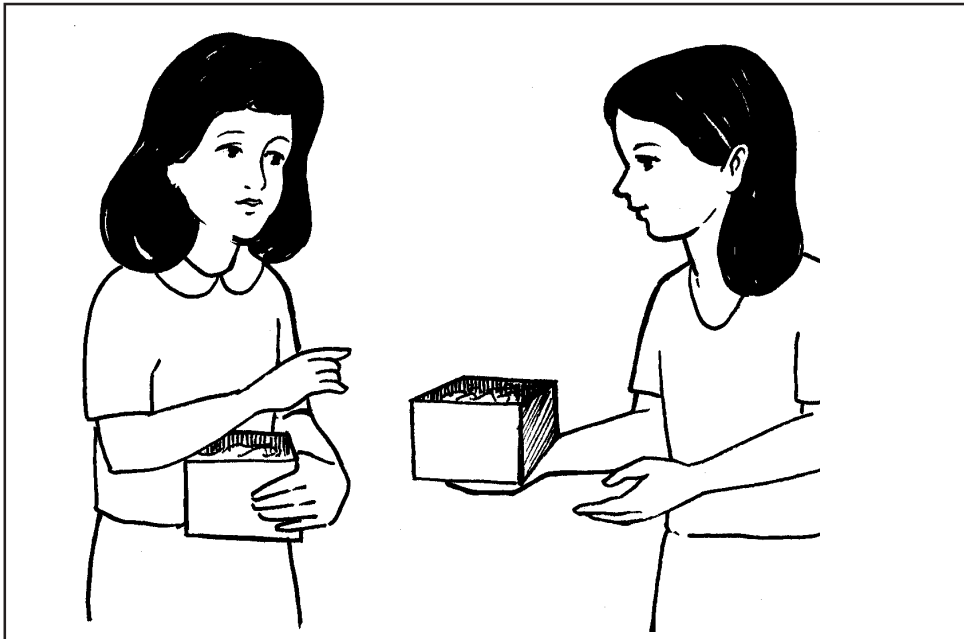
Compare your answers with those in the *Answer Key* on page 46 .



## Let's Learn

Did you notice that both Mrs. Leonida and Mr. Galeon found the same answer although they used different methods? Mrs. Leonida used the expanded form and Mr. Galeon used the short method.

Now, let us learn how to add 2- to 3-digit addends with regrouping.



Angela's first box has 95 wrappers. Her second has 98 wrappers. To find out how many wrappers she has in all, let us add them using the expanded form:

$$\begin{array}{r} 95 = 90 + 5 \\ + 98 = +90 + 8 \\ \hline = 180 + 13 \\ = 100 + 80 + 10 + 3 \\ = 100 + (80 + 10) + 3 \\ = 100 + 90 + 3 \\ = 193 \end{array}$$

### Steps

1. Write the addends in column.
2. Write the expanded form of the addends.
3. Add the ones first followed by the tens.
4. Regroup the sum.
5. Put together the tens.
6. Add all the sum of the hundreds, tens, and ones.

Angela has 193 wrappers in her two boxes.

Let's have another example using 3-digit addends with regrouping. Find the sum of 478 and 735.

$$\begin{array}{r}
 478 = 400 + 70 + 8 \\
 + 735 = +700 + 30 + 5 \\
 \hline
 = 1100 + 100 + 13 \\
 \begin{array}{l}
 \swarrow \quad \searrow \\
 = 1000 + 100 + 100 + 10 + 3 \\
 = 1000 + (100 + 100) + 10 + 3 \\
 = 1000 + 200 + 10 + 3 \\
 = 1213
 \end{array}
 \end{array}$$

### Steps

1. Write the addends in column.
2. Write the expanded form of the addends.
3. Add the ones first followed by the tens and then the hundreds.
4. Regroup the sum.
5. Put together the hundreds.
6. Add all the sum of the hundreds, tens and ones.



### Let's Try This

Find the sum of the following using the the expanded form. Write your solution for each item. The first one has been done for you.

a. 
$$\begin{array}{r}
 25 \\
 + 78 \\
 \hline
 \end{array}$$

Solution:

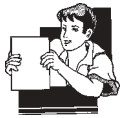
$$\begin{array}{r}
 25 = 20 + 5 \\
 + 78 = +70 + 8 \\
 \hline
 = 90 + 13 \\
 \quad \swarrow \quad \searrow
 \end{array}$$

b. 
$$\begin{array}{r}
 93 \\
 + 68 \\
 \hline
 \end{array}$$

$$\begin{array}{r} c. \quad 856 \\ + 379 \\ \hline \end{array}$$

Solution:

Compare your answers with those in the *Answer Key* on page 47.



## Let's Learn

Now, let's learn how to add with regrouping using the short method. Let's use the same problem on page 14 and one other.

Step 1	Step 2	Step 3
Write the addends in column form  $\begin{array}{r} 95 \\ + 98 \\ \hline \end{array}$	Add the ones Regroup 1 in the tens place $\begin{array}{r} 95 \\ + 98 \\ \hline 3 \end{array}$	Add the tens  $\begin{array}{r} 95 \\ + 98 \\ \hline 193 \leftarrow \text{sum} \end{array}$

Let's have the example with 3-digit addends with regrouping using the short method. Find the sum of 478 and 735.

Step 1	Step 2	Step 3	Step 4
Write the addends in column form  $\begin{array}{r} 478 \\ + 735 \\ \hline \end{array}$	Add the ones. Regroup 1 in the tens place. $\begin{array}{r} 478 \\ + 735 \\ \hline 3 \end{array}$	Add the tens Regroup 1 in the hundreds places $\begin{array}{r} 478 \\ + 735 \\ \hline 13 \end{array}$	Add the hundreds $\begin{array}{r} 478 \\ + 735 \\ \hline 1213 \leftarrow \text{sum} \end{array}$

Notice that we came up with the same answer even if we used two different methods. Ordinarily, the short method is used in performing addition in daily life.





## Let's Try This

Find the sum of the following using the short method. The first one has been done for you.

$$\begin{array}{r} 1. \quad \overset{1}{3} \overset{1}{4} 7 \\ \quad \quad 65 \\ \hline \quad \quad 412 \end{array}$$

$$\begin{array}{r} 2. \quad 329 \\ \quad \quad 28 \\ \hline \quad \quad + \quad 5 \end{array}$$

$$\begin{array}{r} 3. \quad 85 \\ \quad \quad 750 \\ \hline \quad \quad + \quad 35 \end{array}$$

Compare your answers with those in the *Answer Key* on page 47.



## Let's Solve This

In the following situations, solve the problems using the short method. Show your solutions.

1. Aling Lita went to the market and bought eggs. She bought 34 plain eggs, 17 salted eggs and 56 quail eggs. How many eggs did she buy?

2. Mang Lino bought some school supplies for his children. He paid ₱356 for books, ₱128 for notebooks and ₱25 for pens. How much did he spend in all?

3. Ariel counted 472 marbles in his collection. The next day, Becky gave him 88 marbles as a gift. The day after that, Norman gave him 122 marbles. How many marbles does Ariel now have?

Compare your answers with those in the *Answer Key* on page 47.



## Let's See What You Have Learned

1. Solve (a) and (b) using the expanded form. Solve (c) and (d) using the short method.

Solution:

a. 
$$\begin{array}{r} 45 \\ + 67 \\ \hline \end{array}$$

Solution:

$$\begin{array}{r} \text{b. } 189 \\ + 246 \\ \hline \end{array}$$

Solution:

$$\begin{array}{r} \text{c. } 467 \\ 78 \\ + 23 \\ \hline \end{array}$$

Solution:

$$\begin{array}{r} \text{d. } 45 \\ 258 \\ + 35 \\ \hline \end{array}$$

2. Solve the following. Show your solution.

- a. Endoy is preparing bottles for recycling. He has 67 clear bottles, 34 green bottles and 25 brown bottles. How many bottles does he have in all?

- b. Cristina collected different kinds of books for the street children in her community. She got 52 storybooks, 18 math books and 24 science books. How many books did she collect?

Compare your answers with those in the *Answer Key* on page 48.



## Let's Remember

- ◆ Addition can be done in two ways: the expanded form and the short method.
- ◆ In the expanded form, the addends are broken down into the value of each digit before performing addition.
- ◆ In the short method, the addends have to be written in column form before addition can be done. The ones are added first followed by the tens for 2-digit addends and then the hundreds for 3-digit addends.

## LESSON 3

# Subtraction in Every Day Life

If you bought seven apples and gave three to your friends, how many apples are left? If you have 12 eggs and you cooked five of them, how many uncooked eggs do you have?

In the previous lesson, you have learned about addition. There's another basic mathematical operation that we often use – subtraction.

After studying this lesson, you should be able to:

- ◆ subtract whole numbers up to three digits; and
- ◆ apply your knowledge of subtraction to solve daily problems.



## Let's Study and Analyze

Study the situation below.



The picture shows a woman filling in 15 glasses with orange juice. She has already filled 8 glasses. How many more glasses does the woman have to fill?

You can write an addition sentence:  $8 + \square = 15$ . Did you write 7 in the box? That's correct! The woman has to fill 7 glasses more.

But, you can also think of it as a problem in subtraction. Answer this question: How many glasses are not yet filled?

The subtraction is  $15 - 8 = \square$ .

So, we have:

subtraction

addition

$$15 - 8 = \boxed{7}$$

$$\begin{array}{r} 15 \\ - 8 \\ \hline \boxed{7} \end{array}$$

$$\boxed{7} + 8 = 15$$

Can you write the subtraction equation of the following on the blank? Then, write the answer in the box. The first one has been done for you.

a.  $\boxed{4} + 5 = 9$      $9 - 5 = 4$     c.  $\square + 3 = 8$     \_\_\_\_\_

b.  $\square + 6 = 15$     \_\_\_\_\_    d.  $\square + 4 = 12$     \_\_\_\_\_

Notice that when the given sum is subtracted from the given addend, the missing addend is the answer in the subtraction sentence.

You can check the subtraction using addition.

- |                   |                               |
|-------------------|-------------------------------|
| a. $9 - 5 = 4$    | To check, add: $4 + 5 = 9$    |
| b. $15 - 6 = 9$   | To check, add: $9 + 6 = 15$   |
| c. $33 - 13 = 20$ | To check, add: $20 + 13 = 33$ |
| d. $56 - 24 = 32$ | To check, add: $32 + 24 = 56$ |



## Let's Try This

Write the subtraction equation on the blank. Then, write the missing addend in the box.

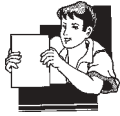
1.  $\square + 7 = 13$     \_\_\_\_\_
2.  $\square + 2 = 11$     \_\_\_\_\_
3.  $\square + 8 = 17$     \_\_\_\_\_

Compare your answers with the ones below.

1.  $\boxed{6} + 7 = 13$        $13 - 7 = 6$

2.  $\boxed{9} + 2 = 11$        $11 - 2 = 9$

3.  $\boxed{9} + 8 = 17$        $17 - 8 = 9$



## Let's Learn

### Subtracting Numbers Without Regrouping

Rudy sold 52 newspapers on Saturday. The following day, he sold 98 newspapers. How many more newspapers did he sell on Sunday than on Saturday?

Use subtraction to find how many more newspapers were sold on Sunday than on Saturday.  $98 - 52 = \square$ .

Just like in addition, we can also use expanded form and the short method to solve subtraction problems.

Expanded form:

#### **EXAMPLE 1**

$$\begin{array}{r} 98 \rightarrow \text{minuend} \quad = 90 + 8 \\ -52 \rightarrow \text{subtrahend} \quad = \underline{50 + 2} \\ \hline \rightarrow \text{difference} \quad = 40 + 6 \\ \quad \quad \quad \quad = 46 \end{array}$$

Steps:

1. Write the numbers in column form.
2. Write the expanded form.
3. Subtract the ones.
4. Subtract the tens.
5. Add the sum of the difference of the tens and ones.

There were 46 more newspapers sold on Sunday than on Saturday.

Take note of the parts of a subtraction sentence or equation:

- ◆ The **minuend** is the number where another number is to be subtracted from.
- ◆ The **subtrahend** is the number to be subtracted from the minuend.
- ◆ The answer in subtraction is called the **difference**.



**EXAMPLE 2**

Lucy is a worker in a garment factory. She delivered a total of 544 dresses in November and 320 dresses in October. How many more dresses did she deliver in November than in October?

Use subtraction to find the difference in delivery for the months of October and November.  $544 - 320 = \square$ . Use the expanded form:

$$\begin{array}{r} 544 \rightarrow \text{minuend} \\ - 320 \rightarrow \text{subtrahend} \\ \hline \end{array} = \begin{array}{r} 500 + 40 + 4 \\ 300 + 20 + 0 \\ \hline 200 + 20 + 4 \\ = 224 \end{array}$$

**Steps**

1. Write the numbers in column form.
2. Write the expanded form.
3. Subtract the ones.
4. Subtract the tens.
5. Subtract the hundreds.
6. Add the sum of the difference of the ones, tens and hundreds.

There were 224 more deliveries in November than in October.

**Let's Try This**

1. Subtract the following using the expanded form. The first has been done for you.

a. 
$$\begin{array}{r} 75 \\ - 42 \\ \hline \end{array}$$

Solution:

$$\begin{array}{r} 75 = 70 + 5 \\ - 42 = 40 + 2 \\ \hline 30 + 3 \\ = 33 \end{array}$$

Solution:

2. 
$$\begin{array}{r} 768 \\ - 425 \\ \hline \end{array}$$

Solution:

$$\begin{array}{r} 3. \quad 175 \\ - \quad 62 \\ \hline \end{array}$$

Compare your answers with the following:

$$\begin{array}{r} 2. \quad 768 = 700 + 60 + 8 \\ - 425 = -400 + 20 + 5 \\ \hline = 300 + 40 + 3 \\ = 343 \end{array}$$

$$\begin{array}{r} 3. \quad 175 = 100 + 70 + 5 \\ - 62 = - \quad 60 + 2 \\ \hline = 100 + 10 + 3 \\ = 113 \end{array}$$

This time, let's learn how to subtract without regrouping using the other method: the short method. Let's use the same examples on pages 24 and 25.

Short Method:

**EXAMPLE 1** Find the difference of 98 and 52.

Step 1	Step 2	Step 3	Step 4
Write the numbers in column. $\begin{array}{r} 98 \\ - 52 \\ \hline \end{array}$	Subtract the ones. $\begin{array}{r} 98 \\ - 52 \\ \hline 6 \end{array}$	subtract the tens. $\begin{array}{r} 98 \rightarrow \text{minuend} \\ - 52 \rightarrow \text{subtrahend} \\ \hline 46 \rightarrow \text{difference} \end{array}$	Check your answers by adding $\begin{array}{r} 46 \rightarrow (\text{difference}) \\ + 52 \rightarrow (\text{subtrahend}) \\ \hline 98 \rightarrow (\text{minuend}) \end{array}$

The difference of 98 and 52 is 46.

**EXAMPLE 2**

Subtract:  $544 - 320 = \square$

Step 1	Step 2	Step 3	Step 4	Step 5
Write the numbers in column	Subtract the ones	Subtract the tens	Subtract the hundreds	check your answers by adding
$\begin{array}{r} 544 \\ - 320 \\ \hline \end{array}$	$\begin{array}{r} 544 \\ - 320 \\ \hline 4 \end{array}$	$\begin{array}{r} 544 \\ - 320 \\ \hline 24 \end{array}$	$\begin{array}{r} 544 \rightarrow \text{minuend} \\ - 320 \rightarrow \text{subtrahend} \\ \hline 224 \rightarrow \text{difference} \end{array}$	$\begin{array}{r} 224 \rightarrow \text{(difference)} \\ - 320 \rightarrow \text{(subtrahend)} \\ \hline 544 \rightarrow \text{(minuend)} \end{array}$

$544 - 320 = \boxed{224}$

In checking your answer in subtraction, add the difference and the subtrahend. If the sum is equal to the minuend, then your answer is correct.

**Let's Try This**

Subtract the following using the short method. Check your answer and write it in the box. Show your solution. The first one has been done for you.

1.  $46 - 12 = \boxed{34}$

Check:

$$\begin{array}{r} 46 \\ - 12 \\ \hline 34 \end{array} \quad \begin{array}{r} 34 \\ + 12 \\ \hline 46 \end{array}$$

2.  $168 - 45 = \square$

Check:

3.  $859 - 217 = \square$

Check:

4.  $517 - 305 = \square$

Check:

Compare your answers with those in the *Answer Key* on pages 48–49.



**STEP 5**

Add all the difference of ones, tens, and hundreds.

$$\begin{array}{r} 153 = 100 + \overset{40}{\cancel{50}} + 13 \\ - 24 = - \quad 20 + 4 \\ \hline 100 + 20 + 9 \\ = 129 \end{array}$$

Arnel and his father sold 129 mangoes.

**EXAMPLE 2**

Find the difference of  $935 - 478 = \boxed{\phantom{000}}$

**STEP 1**

Write the numbers in column and write them in their expanded form.

$$\begin{array}{r} 935 = 900 + 30 + 5 \\ - 478 = - 400 + 70 + 8 \end{array}$$

**STEP 2**

Subtract the ones.

$$\begin{array}{r} 935 = 900 + \overset{20}{\cancel{30}} + 15 \\ - 478 = - 400 + 70 + 8 \\ \hline 7 \end{array}$$

- ◆ Subtract:  $5 - 8$  is not possible
- ◆ Regroup 10 from 30 to the ones place so that 5 becomes 15 and 30 becomes 20
- ◆ Subtract:  $15 - 8 = 7$

**STEP 3**

Subtract the tens.

$$\begin{array}{r} 935 = \overset{800}{\cancel{900}} + \overset{120}{\cancel{30}} + 15 \\ - 478 = - 400 + 70 + 8 \\ \hline 50 + 7 \end{array}$$

- ◆ Subtract:  $20 - 70$  is not possible
- ◆ Regroup 100 from 900 to the tens place so that 20 becomes 120 and 900 becomes 800
- ◆ Subtract:  $120 - 70 = 50$

**STEP 4**

Subtract the hundreds.

$$\begin{array}{r} 935 = \overset{800}{\cancel{900}} + \overset{120}{\cancel{30}} + 15 \\ - 478 = - 400 + 70 + 8 \\ \hline 400 + 50 + 7 \\ = 457 \end{array}$$

- ◆ Subtract:  $800 - 400 = 400$

The difference of  $935 - 478 = \boxed{457}$

Let's look at subtraction with regrouping using the short method.

**EXAMPLE 1**

Subtract 24 from 153.

Step 1	Step 2	Step 3	Step 4	Step 5
Write the numbers in column	Subtract the ones. Regroup the tens to the ones.	Subtract the tens	Subtract the hundreds	check your answers by adding
$\begin{array}{r} 153 \\ - 24 \\ \hline \end{array}$	$\begin{array}{r} 41 \\ 153 \\ - 24 \\ \hline 9 \end{array}$	$\begin{array}{r} 41 \\ 153 \\ - 24 \\ \hline 29 \end{array}$	$\begin{array}{r} 41 \\ 153 \\ - 24 \\ \hline 129 \end{array}$	$\begin{array}{r} 129 \\ + 24 \\ \hline 153 \end{array}$

The difference of  $153 - 24 = \boxed{129}$

**EXAMPLE 2**

Find the difference of  $935 - 478 = \boxed{\phantom{000}}$

Step 1	Step 2	Step 3	Step 4	Step 5
Write the numbers in column	Subtract the ones. Regroup.	Subtract the tens Regroup.	Subtract the hundreds	check your answers by adding
$\begin{array}{r} 935 \\ - 478 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ 935 \\ - 478 \\ \hline 7 \end{array}$	$\begin{array}{r} 821 \\ 935 \\ - 478 \\ \hline 57 \end{array}$	$\begin{array}{r} 821 \\ 935 \\ - 478 \\ \hline 457 \end{array}$	$\begin{array}{r} 11 \\ 457 \\ + 478 \\ \hline 935 \end{array}$

Did we get the same answers as in the examples in the expanded form?



**Let's Try This**

Try working on your own. Subtract the following, using the short method, then check your answer. The first one is done for you.

Check:

$$1. \begin{array}{r} 71 \\ 826 \\ - 457 \\ \hline 369 \end{array} \quad \begin{array}{r} 369 \\ + 457 \\ \hline 826 \end{array}$$

$$2. \begin{array}{r} 6583 \\ - 788 \\ \hline \end{array}$$

$$3. \begin{array}{r} 325 \\ - 49 \\ \hline \end{array}$$

$$4. \begin{array}{r} 926 \\ - 489 \\ \hline \end{array}$$

Compare your answers with those in the *Answer Key* on page 49.



**STEP 3** Subtract the tens. Since  $40 - 80$  is not possible, regroup the hundreds.

$$\begin{array}{r} \text{P}350 = \overset{200}{\cancel{300}} + \overset{140}{50} + 10 \\ - 285 = 200 + 80 + 5 \\ \hline \phantom{\text{P}}60 + 5 \end{array}$$

**STEP 4** Subtract the hundreds (no need to write the 0).

$$\begin{array}{r} \text{P}350 = \overset{200}{\cancel{300}} + \overset{140}{50} + 10 \\ - 285 = 200 + 80 + 5 \\ \hline \phantom{\text{P}}60 + 5 \end{array}$$

**STEP 5** Add all the difference of ones, tens and hundreds.

$$\begin{array}{r} \text{P}350 = \overset{200}{\cancel{300}} + \overset{140}{50} + 10 \\ - 285 = 200 + 80 + 5 \\ \hline \phantom{\text{P}}60 + 5 \\ = \text{P}65 \end{array}$$

Martel would only have P65 left if he buys the shirt.

We can also subtract numbers in expanded form without showing the step by step process. Study the example below.

$$\begin{array}{r} \text{P}350 = \overset{200}{\cancel{300}} + \overset{140}{50} + \overset{1}{0} \\ - 285 = 200 + 80 + 5 \\ = \overline{\phantom{\text{P}}60 + 5} \\ = \text{P}65 \end{array}$$

### **EXAMPLE 2**

Find the difference:  $700 - 365 = \square$

**STEP 1** Write the numbers in column form and write them in expanded form.

$$\begin{array}{r} 700 = 700 + 00 + 0 \\ - 368 = -300 + 60 + 8 \\ \hline \end{array}$$

Notice that we have zero in two places. Take note also that we cannot subtract a bigger number from 0.

What should we do?



**STEP 2** Regroup the hundreds to the tens place.

$$\begin{array}{r} 600 \quad 1 \\ 700 = \cancel{700} + 00 + 0 \\ - 368 = \underline{\underline{-300 + 60 + 8}} \end{array}$$

**STEP 3** Regroup the tens to the ones place.

$$\begin{array}{r} 600 \quad 1 \quad 90 \quad 1 \\ 700 = \cancel{700} + \cancel{00} + 0 \\ - 368 = \underline{\underline{-300 + 60 + 8}} \end{array}$$

**STEP 4** Subtract the ones, tens and hundreds.

$$\begin{array}{r} 600 \quad 1 \quad 90 \quad 1 \\ 700 = \cancel{700} + \cancel{00} + 0 \\ - 368 = \underline{\underline{-300 + 60 + 8}} \\ = 300 + 30 + 2 \end{array}$$

**STEP 5** Add all the difference of ones, tens and hundreds.

$$\begin{array}{r} 600 \quad 1 \quad 90 \quad 1 \\ 700 = \cancel{700} + \cancel{00} + 0 \\ - 368 = \underline{\underline{-300 + 60 + 8}} \\ = 300 + 30 + 2 \\ = 332 \end{array}$$

The difference of 700 and 368 = 332

Let's have an example using the expanded form without showing the step by step process.

**EXAMPLE 3**

What is the difference of 1000 and 475?

**STEP 1** Write the numbers in column form and then write them in expanded form.

$$\begin{array}{r} 1000 = 1000 + 000 + 00 + 0 \\ - 475 = \underline{\underline{-400 + 70 + 5}} \end{array}$$

Notice that there are zeros in three places. Again it is not possible to subtract a greater number from 0. The next step should be:

**STEP 2** Regroup the thousands to the hundreds.

$$\begin{array}{r} 0 \\ 1000 = \cancel{1000} + 1000 + 00 + 0 \\ - 475 = \underline{\underline{-400 + 70 + 5}} \end{array}$$

**STEP 3** Regroup the hundreds to the tens.

$$\begin{array}{r} 1000 = \overset{900}{\cancel{1000}} + \overset{100}{\cancel{1000}} + 0 \\ - 475 = - \quad \quad \quad 400 + 70 + 5 \\ \hline \end{array}$$

**STEP 4** Regroup the tens to the ones.

$$\begin{array}{r} 1000 = \overset{900}{\cancel{1000}} + \overset{90}{\cancel{1000}} + \overset{10}{\cancel{100}} + 0 \\ - 475 = - \quad \quad \quad 400 + 70 + 5 \\ \hline \end{array}$$

**STEP 5** Subtract the ones, tens, hundreds and thousands.

$$\begin{array}{r} 1000 = \overset{900}{\cancel{1000}} + \overset{90}{\cancel{1000}} + \overset{10}{\cancel{100}} + 0 \\ - 475 = - \quad \quad \quad 400 + 70 + 5 \\ \hline \quad \quad \quad 500 + 20 + 5 \end{array}$$

**STEP 6** Add all the difference of the hundreds, tens and ones.

$$\begin{array}{r} 1000 = \overset{900}{\cancel{1000}} + \overset{90}{\cancel{1000}} + \overset{10}{\cancel{100}} + 0 \\ - 475 = - \quad \quad \quad 400 + 70 + 5 \\ \hline \quad \quad \quad 500 + 20 + 5 \\ = 525 \end{array}$$

The difference of  $1000 - 475$  is 525.



## Let's Try This

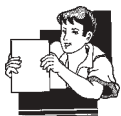
Solve the following by using the expanded form. Show your solutions. The first one has been done for you. Refer to the step by step process above while solving.

$$\begin{array}{r} 1. \quad 700 \\ \quad - 328 \\ \hline \end{array} \quad \begin{array}{r} 700 = \overset{600}{\cancel{700}} + \overset{90}{\cancel{100}} + 0 \\ - 328 = - \quad \quad \quad 300 + 20 + 8 \\ \hline \quad \quad \quad = 300 + 70 + 2 \\ \quad \quad \quad = 372 \end{array}$$

$$\begin{array}{r} 2. \quad 803 \\ - 645 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 6000 \\ - 438 \\ \hline \end{array}$$

Compare your answers with those in the *Answer Key* on page 49.



## Let's Learn

Let's also learn how to subtract with zeros in the minuend using the short method.

Let's use the same examples we used in the expanded form.

### EXAMPLE 1

What is ₱285 subtracted from ₱350.

Step 1	Step 2	Step 3	Step 4	Step 5
Write the numbers in column form  $\begin{array}{r} \text{₱}350 \\ - 285 \\ \hline \end{array}$	Subtract the ones. If not possible, regroup.  $\begin{array}{r} \overset{4}{\cancel{3}}\text{₱}50 \\ - 285 \\ \hline 5 \end{array}$	Subtract the tens. Regroup.  $\begin{array}{r} \overset{21}{\cancel{3}}\text{₱}50 \\ - 285 \\ \hline 65 \end{array}$	Subtract the hundreds  $\begin{array}{r} \overset{21}{\cancel{3}}\text{₱}50 \\ - 285 \\ \hline 65 \end{array}$ (no need to write 0.)	Check your answers by adding  $\begin{array}{r} \overset{1}{\cancel{6}}5 \\ + 285 \\ \hline 350 \end{array}$

₱285 subtracted from ₱350 is ₱65.

**EXAMPLE 2**Find the difference of  $700 - 365 = \boxed{\phantom{000}}$ 

Step 1	Step 2	Step 3	Step 4	Step 5
Write the numbers in column form $\begin{array}{r} 700 \\ -365 \\ \hline \end{array}$	Subtract the ones. If not possible, regroup. $\begin{array}{r} \overset{6}{\cancel{7}}\overset{9}{\cancel{0}} \\ -365 \\ \hline 5 \end{array}$	Subtract the tens $\begin{array}{r} \overset{6}{\cancel{7}}\overset{9}{\cancel{0}} \\ -365 \\ \hline 35 \end{array}$	Subtract the hundreds $\begin{array}{r} \overset{6}{\cancel{7}}\overset{9}{\cancel{0}} \\ -365 \\ \hline 335 \end{array}$	Check your answers by adding $\begin{array}{r} 11 \\ 335 \\ +365 \\ \hline 700 \end{array}$

The difference of  $700 - 365$  is 335.**EXAMPLE 3**

What is the difference if you take away 475 from 1000?

Subtract:  $1000 - 475 = \boxed{\phantom{000}}$ 

Step 1	Step 2	Step 3	Step 4	Step 5
Write the numbers in column form $\begin{array}{r} 1000 \\ -475 \\ \hline \end{array}$	Subtract the ones. If not possible, regroup. $\begin{array}{r} \overset{9}{\cancel{1}}\overset{9}{\cancel{0}}\overset{9}{\cancel{0}} \\ -475 \\ \hline 5 \end{array}$	Subtract the tens $\begin{array}{r} \overset{9}{\cancel{1}}\overset{9}{\cancel{0}}\overset{9}{\cancel{0}} \\ -475 \\ \hline 25 \end{array}$	Subtract the hundreds $\begin{array}{r} \overset{9}{\cancel{1}}\overset{9}{\cancel{0}}\overset{9}{\cancel{0}} \\ -475 \\ \hline 525 \end{array}$	Check your answers by adding $\begin{array}{r} 11 \\ 525 \\ +475 \\ \hline 1000 \end{array}$

The difference of  $1000 - 475 = 525$ .

Notice that subtraction is not immediately possible if the digit in the minuend is less than the digit in the subtrahend. To make this possible, regrouping has to be done.



## Let's Try This

Try working on your own. Subtract the following using the short method. Check your answer also. The first has been done for you.

1. What is the difference of  $800 - 439$ ?

$$\begin{array}{r} 7,9 \\ \cancel{8}00 \\ - 439 \\ \hline 361 \end{array} \quad \begin{array}{l} \text{Check:} \\ \leftarrow \\ \rightarrow \\ \end{array} \quad \begin{array}{r} 361 \\ + 439 \\ \hline 800 \end{array}$$

2. Take away 57 from 103.

3. Subtract 752 from 2000.

Compare your answers with those in the *Answer Key* on page 49.



## Let's See What You Have Learned

Solve the following. Show your solutions using the short method. Check your answer by adding.

1. 
$$\begin{array}{r} 67 \\ - 35 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 165 \\ - 98 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 3000 \\ - 947 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 508 \\ - 309 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 800 \\ - 567 \\ \hline \end{array}$$

6. Aling Rosa bought 35 meters of cloth. She plans to make bed sheets and pillowcases out of the cloth. She used 25 meters for the bed sheets. How much cloth is left for the pillows?

7. Mang Simon harvested 115 sacks of rice this season. He sold 85 sacks to a nearby market. How many sacks of rice does he still have?

8. Tomas earned 900 pesos this day from driving his jeep. He plans to give 567 pesos to his sister. How much money will be left?

Compare your answers with those in the *Answer Key* on pages 49–51.



## Let's Remember

- ◆ The parts of a subtraction sentence are the following:

$$\begin{array}{r} \text{P}989 \\ - 567 \\ \hline \text{P}422 \end{array}$$

minuend — is the number where another number is to be subtracted from.  
subtrahend — is the number to be subtracted.  
difference — is the answer in subtraction.

- ◆ In subtracting 2-digit numbers, subtract the ones first and then the tens. In subtracting 3-digit numbers, start with the ones moving left to the hundreds.
- ◆ In subtraction, the minuend must always be greater than the subtrahend.
- ◆ If the digit in the minuend is less than the digit in the subtrahend, regrouping must be done to have subtraction possible.
- ◆ In checking the answer in subtraction, add the difference and the subtrahend. If the sum is equal to the minuend, then the answer in subtraction (difference) is correct.



## Let's Sum Up

- ◆ **Place value** is the value given to a digit based on the place it occupies in the number relative to the units place.
- ◆ A **digit** is part of a number, which is between 0 and 9.
- ◆ The value of each digit is equal to the digit times its place value.
- ◆ Zeros are place holders or they represent a place but they are not read nor have value.
- ◆ Addition can be done in two ways: the expanded form and the short method.
- ◆ In the expanded form, the addends are broken down into the value of each digit before performing addition.
- ◆ In the short method, the addends have to be written in column form before addition can be done. The ones are added first followed by the tens for 2-digit addends and move on to the hundreds for 3-digit addends.



- ◆ The parts of a subtraction sentence are the following:

$$\begin{array}{r} \text{P}989 \\ - 567 \\ \hline \text{P}422 \end{array}$$

minuend — is the number where another number is to be subtracted from.  
 subtrahend — is the number to be subtracted.  
 difference — is the answer in subtraction.

- ◆ In subtracting 2-digit numbers, subtract the ones first and the tens. In subtracting 3-digit numbers, start with the ones moving left to the hundreds.
- ◆ In subtraction, the minuend must always be greater than the subtrahend.
- ◆ If the digit in the minuend is less than the digit in the subtrahend, regrouping must be done to have subtraction possible.
- ◆ In checking the answer in subtraction, add the difference and the subtrahend. If the sum is equal to the minuend, then the answer in subtraction (difference) is correct.



## What Have You Learned?

1. Tell how many digits each number has. Write the answer on the blank before the letter. Then, write down the digits of each number in the box after the number.

\_\_\_ a. 246

\_\_\_ b. 12 345

\_\_\_ c. 987 654

2. What is the value of the digit 6 in the following numbers? Write your answer in the blank before the number.

a. \_\_\_\_\_ 206

b. \_\_\_\_\_ 689

c. \_\_\_\_\_ 65 725

3. Add. Show your solutions using the short method.

$$\begin{array}{r} \text{a. } 23 \\ + 64 \\ \hline \end{array}$$

$$\begin{array}{r} \text{b. } 123 \\ + 75 \\ \hline \end{array}$$

$$\begin{array}{r} \text{c. } 462 \\ + 159 \\ \hline \end{array}$$

4. Subtract. Show your solutions.

$$\begin{array}{r} \text{a. } 96 \\ - 89 \\ \hline \end{array}$$

$$\begin{array}{r} \text{b. } 802 \\ - 555 \\ \hline \end{array}$$

$$\begin{array}{r} \text{c. } 7000 \\ - 674 \\ \hline \end{array}$$

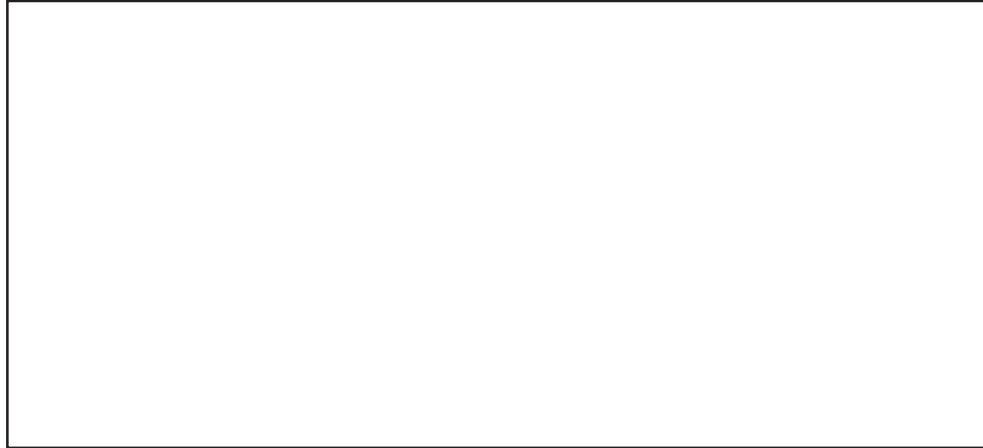
5. Solve the following problems. Show your solutions.

- a. Marco needs to arrange some pieces of canned fruits in a supermarket where he works. There are 65 canned oranges and 35 canned pineapples. How many canned fruits are there for him to arrange?

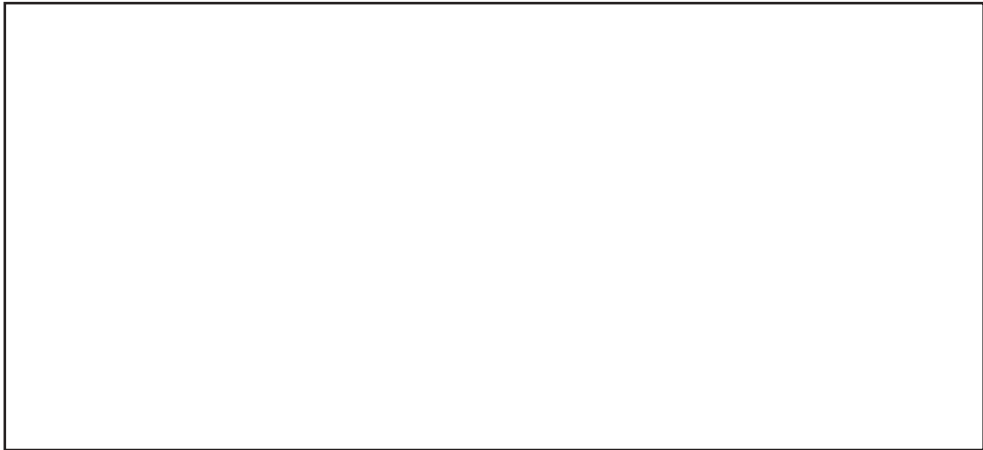
- b. For her birthday, May received 100 pesos from her mom, 150 pesos from her dad and 200 pesos from her grandparents. How much money did she receive?

- c. Siena is reading a 256-page book. She has read 145 pages of the book already. How many more pages does she have to read?

- d. Kiko has 500 pesos. If he spends 375 pesos for groceries, how much money will be left?



- e. Anton earns 700 pesos a day as a tricycle driver. If he spends 195 pesos for gasoline, how much money will be left?



Well, how did you do? Compare your answers with those in the *Answer Key* on pages 51–52.

If the number of correct answers you got is:

16 –17      Very good! You have learned a lot from this module.

13 –15      Good! Just go back and review the items that you answered incorrectly.

0–12      You have to review the whole module again.

You may now proceed to the next module.



# Answer Key

## A. Let's See What You Already Know (pages 2–4)

- (c) The number 3456 has 4 digits: 3, 4, 5 and 6.
- (c) The value of the digit 4 in the number 456 is 4 hundreds or four hundred.
- (d) 8 has the greatest value in 8 thousands.
- (c) Five plus four is equal to nine.  $IIII + IIII = IIIIIIII$
- (c) Fifteen plus eight is twenty-three.  $15 + 8 = 23$ .
- (d) Jessie and Jamie have to pay 27 pesos.  $9 + 18 = 27$ .
- (a) Aling Mila will have 21 fruits in all.  $5 + 7 + 9 = 21$ .
- (b) Nine minus two is equal to seven.  $9 - 2 = 7$ .
- (b) Nine books would be left.  $17 - 8 = 9$ .
- (d) Nothing was left to Mang Raul.  $12 - 5 - 4 - 3 = 0$ .

## B. Lesson 1

*Let's Try This (page 8)*

- |                       |                      |
|-----------------------|----------------------|
| a. <u>4</u> 9 hundred | ___ 90 ones          |
| b. ___ 90 hundred     | <u>4</u> 90 thousand |
| c. ___ 9 hundred      | <u>4</u> 9 thousand  |
| d. ___ 9 tens         | <u>4</u> 900 ones    |
| e. ___ 90 ones        | <u>4</u> 90 hundred  |

*Let's See What You Have Learned (pages 8–9)*

- |                    |   |
|--------------------|---|
| <u>3</u> a. 267    | <input type="text" value="2, 6, 7"/>          |
| <u>6</u> b. 765432 | <input type="text" value="7, 6, 5, 4, 3, 2"/> |
| <u>4</u> c. 3198   | <input type="text" value="3, 1, 9, 8"/>       |
- What is the value of the digit 2 in the following numbers? Write your answer in the blank before the number.
  - 2 thousands or 2 thousand
  - 2 tens or twenty



*Let's Try This (pages 15–16)*

$$\begin{aligned}
 \text{b. } 93 &= 90 + 3 \\
 + 68 &= +60 + 8 \\
 \hline
 &= 150 + 11 \\
 &= 100 + 50 + 10 + 11 \\
 &= 100 + (50 + 10) + 1 \\
 &= 100 + 60 + 1 \\
 &= 161
 \end{aligned}$$

$$\begin{aligned}
 \text{c. } 856 &= 800 + 50 + 6 \\
 + 379 &= + 300 + 70 + 9 \\
 \hline
 &= 1100 + 120 + 15 \\
 &= 1000 + 100 + 100 + 20 + 10 + 5 \\
 &= 1000 + (100 + 100) + (20 + 10) + 5 \\
 &= 1000 + 200 + 30 + 5 \\
 &= 1235
 \end{aligned}$$

*Let's Try This (page 17)*

$$\begin{array}{r}
 2. \quad 3\overset{2}{2}9 \\
 \quad 28 \\
 + \quad 5 \\
 \hline
 \quad 362
 \end{array}$$

$$\begin{array}{r}
 3. \quad \overset{1}{8}5 \\
 \quad \overset{1}{7}50 \\
 + \quad 35 \\
 \hline
 \quad 870
 \end{array}$$

*Let's Solve This (pages 17–18)*

$$\begin{array}{r}
 1. \quad \overset{1}{3}4 \\
 \quad 17 \\
 + 56 \\
 \hline
 \quad 107 \text{ eggs}
 \end{array}$$

$$\begin{array}{r}
 3. \quad \overset{11}{4}72 \\
 \quad 88 \\
 + 122 \\
 \hline
 \quad 682 - \text{the number of marbles} \\
 \quad \quad \quad \text{Ariel now has}
 \end{array}$$

$$\begin{array}{r}
 2. \quad \overset{11}{\text{P}}356 \\
 \quad 128 \\
 + \quad 25 \\
 \hline
 \quad \text{P}519 - \text{total amount} \\
 \quad \quad \quad \text{Mang Lino spent}
 \end{array}$$

*Let's See What You Have Learned (pages 18–20)*

$$\begin{array}{r}
 \text{a. } 45 = 40 + 5 \\
 + 67 = +60 + 7 \\
 \hline
 = 100 + 12 \\
 \phantom{=} \swarrow \\
 = 100 + 10 + 2 \\
 = 112
 \end{array}$$

$$\begin{array}{r}
 \text{b. } 189 = 100 + 80 + 9 \\
 + 246 = +200 + 40 + 6 \\
 \hline
 = 300 + 120 + 15 \\
 \phantom{=} \swarrow \quad \searrow \\
 = 300 + 100 + 20 + 10 + 5 \\
 = (300 + 100) + (20 + 10) + 5 \\
 = 400 + 30 + 5 \\
 = 435
 \end{array}$$

$$\begin{array}{r}
 \text{c. } \overset{11}{467} \\
 78 \\
 + 23 \\
 \hline
 568
 \end{array}$$

$$\begin{array}{r}
 \text{d. } 45 \\
 258 \\
 + 35 \\
 \hline
 338
 \end{array}$$

$$\begin{array}{r}
 \text{2. a. } 67 \\
 34 \\
 + 25 \\
 \hline
 126 \text{ bottles}
 \end{array}$$

$$\begin{array}{r}
 \text{b. } \overset{1}{52} \\
 18 \\
 + 24 \\
 \hline
 94 \text{ books}
 \end{array}$$

**C. Lesson 2**

*Let's Try This (page 27)*

Check:

$$\begin{array}{r}
 \text{2. } 168 \\
 - 45 \\
 \hline
 123
 \end{array}
 \quad
 \begin{array}{r}
 \leftarrow 123 \\
 + 45 \\
 \hline
 \rightarrow 168
 \end{array}$$

Check:

$$\begin{array}{r}
 \text{3. } 859 \\
 - 217 \\
 \hline
 642
 \end{array}
 \quad
 \begin{array}{r}
 \leftarrow 642 \\
 + 217 \\
 \hline
 \rightarrow 859
 \end{array}$$



Check:

$$\begin{array}{r}
 4. \quad 517 \\
 - 305 \\
 \hline
 212
 \end{array}
 \quad
 \begin{array}{r}
 \leftarrow 212 \\
 + 305 \\
 \hline
 \rightarrow 517
 \end{array}$$

*Let's Try This (page 30)*

Check:

$$\begin{array}{r}
 2. \quad \overset{51417}{\cancel{6583}} \\
 - 788 \\
 \hline
 5795
 \end{array}
 \quad
 \begin{array}{r}
 \leftarrow 111 \\
 5795 \\
 + 788 \\
 \hline
 \rightarrow 6583
 \end{array}$$

Check:

$$\begin{array}{r}
 3. \quad \overset{211}{\cancel{325}} \\
 - 49 \\
 \hline
 276
 \end{array}
 \quad
 \begin{array}{r}
 \leftarrow 11 \\
 276 \\
 + 49 \\
 \hline
 \rightarrow 325
 \end{array}$$

Check:

$$\begin{array}{r}
 4. \quad \overset{811}{\cancel{926}} \\
 - 489 \\
 \hline
 437
 \end{array}
 \quad
 \begin{array}{r}
 \leftarrow 11 \\
 437 \\
 + 489 \\
 \hline
 \rightarrow 926
 \end{array}$$

*Let's Try This (pages 34–35)*

$$\begin{array}{r}
 2. \quad 803 = \overset{700}{\cancel{800}} + \overset{90}{\cancel{100}} + 3 \\
 - 645 = -600 + 40 + 5 \\
 \hline
 = 100 + 50 + 8 \\
 = 158
 \end{array}$$

$$\begin{array}{r}
 3. \quad 6000 = \overset{5000}{\cancel{6000}} + \overset{900}{\cancel{1000}} + \overset{90}{\cancel{100}} + 10 \\
 - 438 = -400 + 30 + 8 \\
 \hline
 = 5000 + 500 + 60 + 2 \\
 = 5562
 \end{array}$$

*Let's Try This (page 37)*

Check:

$$\begin{array}{r}
 2. \quad \overset{9}{\cancel{103}} \\
 - 57 \\
 \hline
 46
 \end{array}
 \quad
 \begin{array}{r}
 \leftarrow 46 \\
 + 57 \\
 \hline
 \rightarrow 103
 \end{array}$$

Check:

$$\begin{array}{r}
 3. \quad \overset{199}{\cancel{2000}} \\
 - 752 \\
 \hline
 1248
 \end{array}
 \quad
 \begin{array}{r}
 \leftarrow 111 \\
 1248 \\
 + 752 \\
 \hline
 \rightarrow 2000
 \end{array}$$

### D. Lesson 3

*Let's See What you Have Learned (pages 38–39)*

Check:

$$\begin{array}{r}
 1.) \quad 67 \\
 - 35 \\
 \hline
 32
 \end{array}
 \quad
 \begin{array}{l}
 \blacklozenge \text{ Subtract the ones.} \\
 7 - 5 = 2 \\
 \blacklozenge \text{ Subtract the tens.} \\
 6 - 3 = 3
 \end{array}
 \quad
 \begin{array}{r}
 32 \\
 + 35 \\
 \hline
 67 \text{ (same as the} \\
 \text{minuend)}
 \end{array}$$

$$\begin{array}{r} 2.) \quad \overset{5}{\cancel{1}65} \\ - \quad 98 \\ \hline \quad 67 \end{array}$$

- ◆ Subtract the ones. It is not possible, regroup the tens.
- ◆ Subtract the tens. Not possible again, consider the hundreds.

Check:

$$\begin{array}{r} 67 \\ + 98 \\ \hline 165 \text{ (same as the} \\ \text{minuend)} \end{array}$$

$$\begin{array}{r} 3.) \quad \overset{2,9,9}{\cancel{3}000} \\ - \quad 947 \\ \hline \quad 2053 \end{array}$$

- ◆ Since subtraction is not possible in the ones, tens and hundreds:
- ◆ Regroup the thousands to the hundreds, the hundreds to the tens, the tens to the ones. Then,
- ◆ Subtract the ones, the tens, the hundreds, and bring down the thousands.

Check:

$$\begin{array}{r} 2053 \\ + 947 \\ \hline 3000 \text{ (same as the} \\ \text{minuend)} \end{array}$$

$$\begin{array}{r} 4.) \quad \overset{4,9}{\cancel{5}08} \\ - \quad 309 \\ \hline \quad 199 \end{array}$$

- ◆ Since subtraction is not possible in the ones and tens:
- ◆ Regroup the hundreds to the tens, then tens to the ones.
- ◆ Then, subtract the ones, tens, and hundreds.

Check:

$$\begin{array}{r} \overset{11}{1}99 \\ + 309 \\ \hline 508 \text{ (same as the} \\ \text{minuend)} \end{array}$$

$$\begin{array}{r}
 5.) \quad \overset{79}{\cancel{800}} \\
 - 567 \\
 \hline
 233
 \end{array}$$

Since subtraction is not possible in the ones and tens:

- ◆ Regroup the hundreds to the tens and then tens to the ones.
- ◆ Subtract the ones, tens, and hundreds.

Check:

$$\begin{array}{r}
 \overset{11}{233} \\
 + 567 \\
 \hline
 800 \text{ (same as the} \\
 \text{minuend)}
 \end{array}$$

$$\begin{array}{r}
 6.) \quad 35 \text{ meters of cloth} \\
 - 25 \text{ meters of cloth for bed sheets} \\
 \hline
 10 \text{ meters left for the pillows}
 \end{array}$$

$$\begin{array}{r}
 7.) \quad 115 \text{ sacks of rice harvested} \\
 - 85 \text{ sacks of rice sold} \\
 \hline
 30 \text{ sacks of rice left}
 \end{array}$$

$$\begin{array}{r}
 8.) \quad \overset{89}{\cancel{P900}} \\
 - 567 \\
 \hline
 P333
 \end{array}$$

Tomas had P333 left.

### E. What Have You Learned? (pages 41–44)

1.  $\underline{3}$  a. 246 2, 4, 6

$\underline{5}$  b. 12 345 1, 2, 3, 4, 5

$\underline{6}$  c. 987 654 9, 8, 7, 6, 5, 4

2. a. 6 ones or 6  
 b. 600  
 c. 60000

3. a.  $\begin{array}{r} 23 \\ + 64 \\ \hline 87 \end{array}$

b.  $\begin{array}{r} 123 \\ + 75 \\ \hline 198 \end{array}$

c.  $\begin{array}{r} \overset{11}{462} \\ + 159 \\ \hline 621 \end{array}$

$$\begin{array}{r}
 4. \quad a. \quad \begin{array}{r} 81 \\ 96 \\ - 89 \\ \hline 7 \end{array} \\
 \\
 b. \quad \begin{array}{r} 79 \\ 802 \\ - 555 \\ \hline 247 \end{array} \\
 \\
 c. \quad \begin{array}{r} 699 \\ 7000 \\ - 674 \\ \hline 6326 \end{array}
 \end{array}$$

$$\begin{array}{r}
 5. \quad a. \quad \begin{array}{r} 65 \\ + 35 \\ \hline 100 \end{array}
 \end{array}$$

Marco needs to arrange 100 canned fruits.

$$\begin{array}{r}
 b. \quad \begin{array}{r} \text{P}100 \\ 150 \\ + 200 \\ \hline 450 \end{array}
 \end{array}$$

May received P450 for her birthday.

$$\begin{array}{r}
 c. \quad \begin{array}{r} 256 \\ - 145 \\ \hline 111 \end{array}
 \end{array}$$

Siena still needs to read 111 pages.

$$\begin{array}{r}
 d. \quad \begin{array}{r} 49 \\ \text{P}500 \\ - 375 \\ \hline \text{P}125 \end{array}
 \end{array}$$

Kiko will have 125 pesos left.

$$\begin{array}{r}
 e. \quad \begin{array}{r} \text{P}700 \\ - 195 \\ \hline \text{P}505 \end{array}
 \end{array}$$

Anton has P505 left.



## References

Bogomolny, Alex. *Place Value*. 1999. <http://www.cut-the-knot.com/ctk/Self Descriptive.html>. May 31, 2000, date accessed.

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