What Is This Module About?

How do you compute the total price of 315 pencils if a pencil costs ₱11? How much would a committee spend for the dinner of 123 delegates if dinner for one person costs ₱65? How would you know how much a pack of noodles is if a box of noodles containing 64 packs costs ₱384? These practical problems require you to perform multiplication and division to come up with a solution.

In this module, you will learn about the multiplication and division of three-to-five digit numbers. You will learn how to use this knowledge in solving some everyday problems.

Before you study this module, make sure you have already read the EL1 modules entitled *Multiplication and Division 1* and *Multiplication and Division 2.*

This module is made up of into two lessons:

Lesson 1—*Multiplication of Whole Numbers*

Lesson 2—*Division of Whole Numbers*

What Will You Learn From This Module?

After studying this module, you should be able to:

- multiply three-to-five-digit whole numbers by two-to-three-digit multipliers;
- divide three-to-five-digit whole numbers; and
- apply your knowledge of multiplication and division of whole numbers in solving word problems.

Let's See What You Already Know

Before you continue reading this module, take the following test first to find out how well you know the topics to be discussed.

A. Solve for the following.

1. 29687×563

2. $56772 \div 684$

B. Divide 4189 by 73 and check your answer.

C. Solve the following word problems.

1. Mr. Cruz earns ₱13690 a month. How much will he earn in 24 months?

2. Mrs. Dizon owed a bank ₱28764, including interest. If Mrs. Dizon plans to pay the bank in 12 equal monthly installments, how much should she pay for each month?

Well, how was it? Do you think you fared well? Compare your answers with those in the *Answer Key* on pages 36 to 38 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 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.

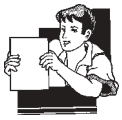
LESSON 1

Multiplication of Whole Numbers

People simply cannot do without multiplication. You use it to determine the total cost when you buy large quantities of a single item (for example, buying 145 pieces of notebooks with a unit price of ₱18). It may also be used to compute for monthly expenses given a fixed amount spent in a day (such as in finding the amount spent in a month for the daily allowance of a son/ daughter who goes to school every day).

After studying this lesson, you should be able to:

- multiply three-to-five-digit numbers by two-to-three-digit multipliers; and
- solve word problems involving multiplication of whole numbers.



Let's Learn

You have learned how to multiply small numbers in previous modules. Let us now move on to the multiplication of bigger numbers. We will now learn how to multiply four-digit numbers by two-digit numbers. Let us take a look at the problem below.

Mr. Bautista earns ₱7250 in a month. How much will he earn in 2 years?

Do you know how many months there are in a year? If you answered 12 months, you're right. How many months are there in 2 years? Did you say 24 months? If you did, you're correct. To find the answer to the problem, multiply Mr. Bautista's monthly income (₱7250) by the number of months he will work (24). Shown on the next page are the steps in to multiplying 7250 by 24.

STEP 1 Write the two numbers in column form, with the larger number in the first row and the smaller number in the second row.

$$\begin{array}{r} 7250 \\ \times\ \ 24 \\ \hline \end{array}$$

7250 → multiplicand

24 → multiplier

STEP 2 Multiply the ones then the tens, the hundreds and the thousands digits of the *multiplicand* by the ones digit (4) of the multiplier.

$$\begin{array}{r} {\scriptstyle 1\ 2\ \ \ \ } \\ 7250 \\ \times\ \ 24 \\ \hline 29000 \end{array}$$

- 4 × 0 = 0; write 0 below the ones column
- 4 × 5 = 20; regroup 2 in the hundreds place and write 0 below the tens column
- 4 × 2 = 8; add the regrouped number 2 to the sum: 8 + 2 = 10; regroup 1 in the thousands place and write 0 below the hundreds column
- 4 × 7 = 28; add the regrouped number 1 to the sum 28 + 29 = 33; write 29 to the left of 0

29000 is the **first partial product.**

STEP 3 Multiply the ones then the tens, the hundreds and the thousands digits of the multiplicand by the tens digit of the mutiplier.

$$\begin{array}{r} {\scriptstyle 1\ \ \ \ } \\ 7250 \\ \times\ \ 24 \\ \hline 29000 \\ 14500 \end{array}$$

29000 → first partial product

- 2 × 0 = 0; write 0 below the tens column
- 2 × 5 = 10; regroup 1 in the hundreds place and write 0 below the hundreds column
- 2 × 2 = 4; add the regrouped number 1 to the sum: 4 + 1 = 5; write 5 below the thousands column
- 2 × 7 = 14; write 14 to the left of 5

14500 is the **second partial product.**

STEP 4 Add the first and the second partial products to get the final product.

$$
\begin{array}{rl}
 & 7250 \\
\times & \quad 24 \\
\hline
 & 29000 \longrightarrow \text{first product} \\
+ & 14500 \longrightarrow \text{second product} \\
\hline
 & 174000 \longrightarrow \text{final product}
\end{array}
$$

The final product is 174000. Therefore, Mr. Bautista will earn ₱174000 in 2 years.

Let's Try This

Practice solving for the product of each of the items below, following the steps in *Let's Learn.* The first one has been done for you.

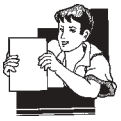
1. 4629×73

$$
\begin{array}{rl}
 & \begin{array}{ccc} 4 & 2 & 6 \\ 1 & & 2 \end{array} \\
 & 4629 \\
\times & \quad 73 \\
\hline
 & 13887 \\
+ & 32403 \\
\hline
 & 337917
\end{array}
$$

2. 8723×26

3. 2586×84

Compare your answers with those in the *Answer Key* on page 38.



Let's Learn

Let us now study the multiplication of five-digit numbers by three-digit numbers. As you will notice, the steps in the multiplication process are the same as the previous ones except of course that the numbers are bigger. This will result in a more lengthy solution, but the process will basically remain the same. Take a look at the following problems.

EXAMPLE 1 For upgrading public school facilities, the Department of Education has decided to purchase computers for selected public schools in Metro Manila. If the department purchases 629 computers with a unit price of ₱26485, how much will it spend for all the computers?

To find the answer, multiply the unit price of the computer (₱26485) by the number of computers to be purchased (629). Below are the steps in finding the product of 26485 and 629.

STEP 1 Write the numbers in column form, with the larger number in the first row and the smaller number in the second row.

$$\begin{array}{rl} 26485 & \longrightarrow \text{ multiplicand} \\ \times\ 629 & \longrightarrow \text{ multiplier} \end{array}$$

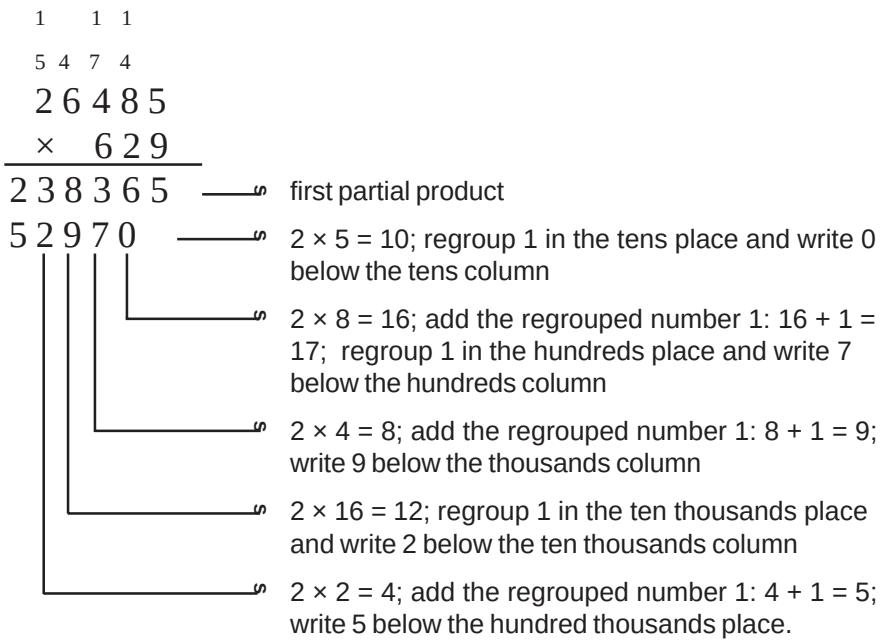
STEP 2 Multiply the ones, the tens, the hundreds, the thousands and the ten thousands digits of the multiplicand by the ones digit of the multiplier.

$$\begin{array}{r} {\scriptstyle 5\ 4\ 7\ 4} \\ 26485 \\ \times\ \ 629 \\ \hline 238365 \end{array}$$

- 9 × 5 = 45; regroup 4 in the tens place and write 5 below the ones column
- 9 × 8 = 72; add the regrouped number 4: 72 + 4 = 76; regroup 7 in the hundreds place and write 6 below the hundreds column
- 9 × 4 = 36; add the regrouped number 7: 36 + 7 = 43; regroup 4 in the thousands place and write 3 below the hundreds column
- 9 × 6 = 54; add the regrouped number 4: 54 + 4 = 58; regroup 5 in ten thousands place and write 8 below the thousands column
- 9 × 2 = 18; add the regrouped number 5: 18 + 5 = 23; write 23 to the left of 8.

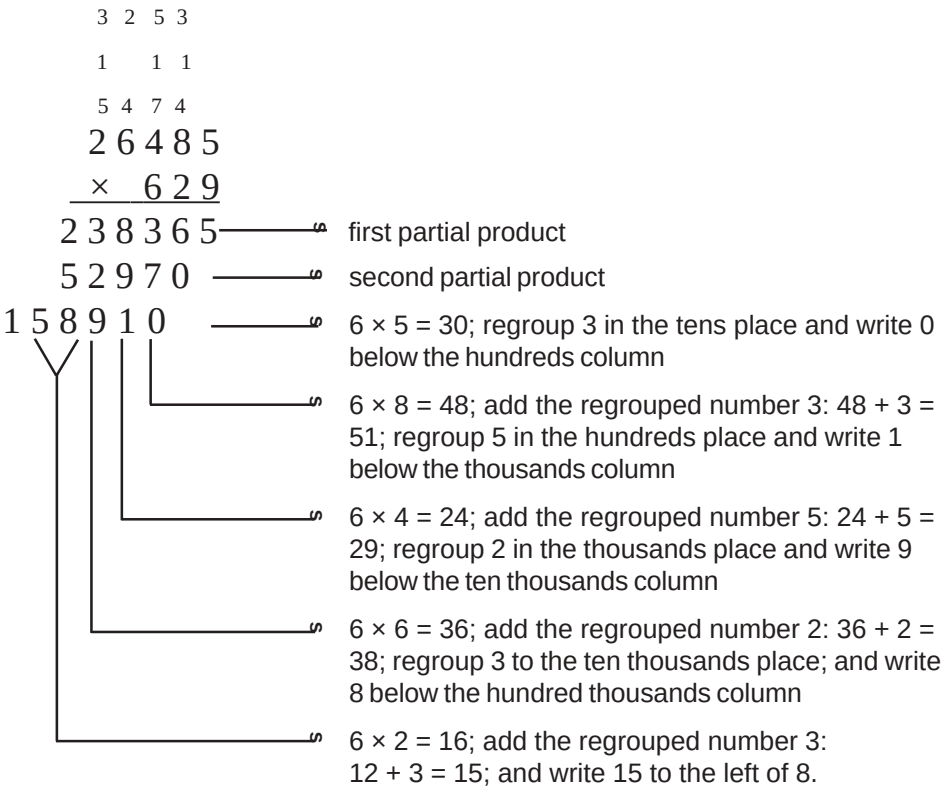
238365 is the **first partial product.**

STEP 3 Multiply the ones, the tens, the hundreds, the thousands and the ten thousands digits of the multiplicand by the tens digit of the multiplier.



52970 is the **second partial product.**

STEP 4 Multiply the ones, the tens, the hundreds, the thousands and the ten thousands digits of the multiplicand to the hundreds digit of the multiplier



STEP 5 Add the partial products to get the final product.

$$\begin{array}{r} 26485 \\ \times\ 629 \\ \hline 238365 \\ 52970 \\ +\ 158910 \\ \hline 16659065 \end{array}$$

Therefore, the Department of Education will spend ₱16659065 for the purchase of computers.

EXAMPLE 2 Find the product of 3563 and 703.

STEP 1 Write the two numbers in column form with the larger number in the first row and the smaller number in the second row.

$$\begin{array}{r} 3562 \\ \times 703 \\ \hline \end{array}$$

3562 → multiplicand

×703 → multiplier

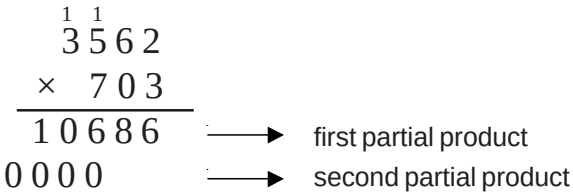
STEP 2 Multiply the ones, the tens, the hundreds and the thousands digits of the multiplicand by the ones digit of the multiplier.

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 3562 \\ \times 703 \\ \hline 10686 \end{array}$$

- 3 × 2 = 6; write 6 below the ones column
- 3 × 6 = 18; regroup1 in the hundreds place and write 8 below the tens column
- 3 × 5 = 15; add the regrouped number 1: 15 + 1= 16; regroup 1 in the thousands place and write 6 below the hundreds place
- 3 × 3 = 9; add the regrouped number 1: 9 + 1 = 10; write 10 to the left of 6

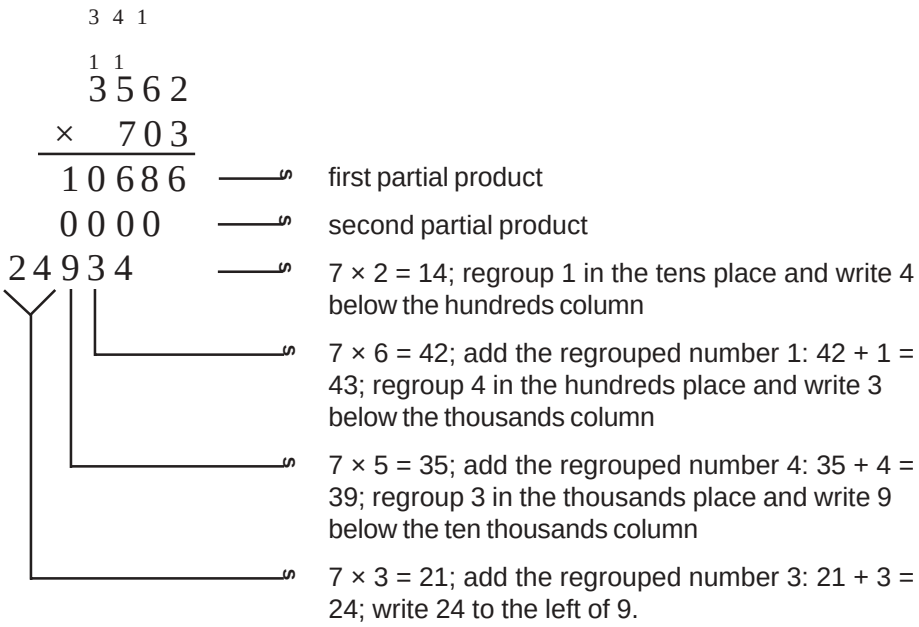
10686 is the **first partial product.**

STEP 3 Multiply the ones, the tens, hundreds and thousands digits of the multiplicand by the tens digit of the multiplier.



0000 is the **second partial product.**

STEP 4 Multiply the ones, the tens, the hundreds and the thousands digits of the multiplicand by the hundreds digit of the multiplier.



24934 is the **third partial product.**

STEP 5 Add the first, second and third partial products to get the final product.

$$\begin{array}{r} 3562 \\ \times\ 703 \\ \hline 10686 \\ 0000 \\ +24934 \\ \hline 2504086 \end{array}$$

2504086 is the **final product.**

Let's go back to Step 3 and take a look at the computation for the second partial product which is all zeros. Notice that when 0 is added to any number the value of the number does not change (for example, 0 + 5 = 5; 0 + 6 = 6).

So there's a shorter way of multiplication when there's zero in the multiplier. You may write the partial product with the zero multiplier written only once. Then, continue multiplying with the hundreds digit of the multiplier.

```
  3 4 1
    1 1
  3 5 6 2
×   7 0 3
  1 5 6 8 6
2 4 9 3 4 0
```

0 × 2 = 0 (no need to multiply the other digits by 0)

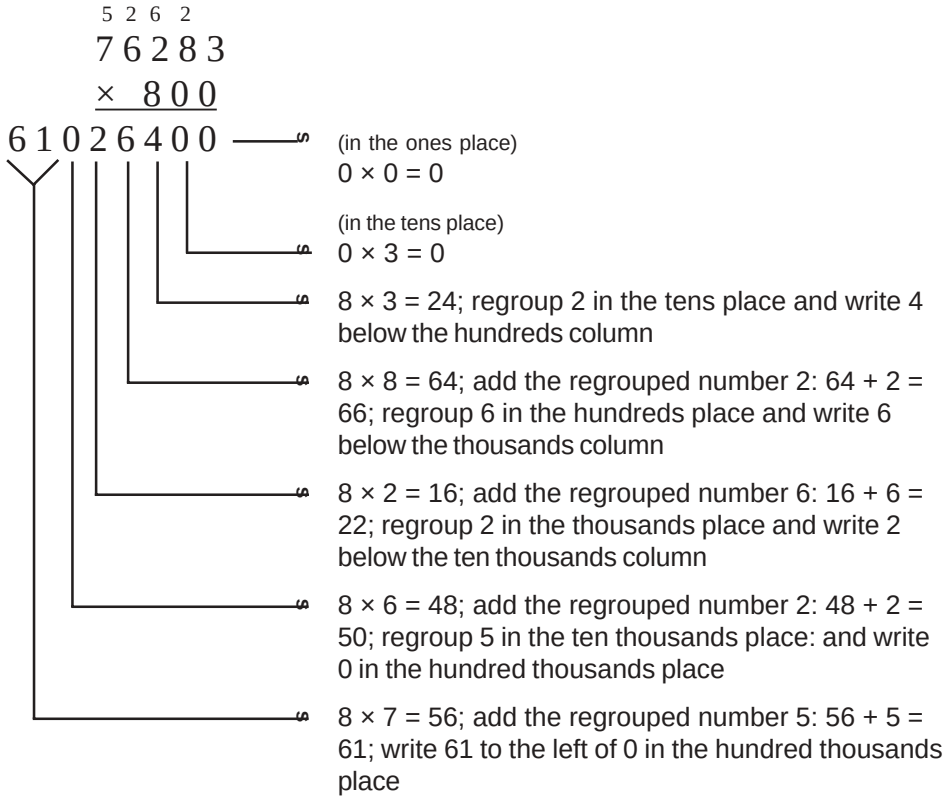
7 × 2 = 14; regroup 1 in the tens place and write 4 below the hundreds column (continue with the same steps as in step 4)

Notice that there are only two partial products. The partial product 0 is included in the second partial product. Let's add the two partial products and find out if we arrive at the same answer as the one in step 5 with the three partial products.

```
  3 4 1
    1 1
  3 5 6 2
×   7 0 3
  1 0 6 8 6      first partial product
+2 4 9 3 4 0     second partial product
2 5 0 4 0 8 6    final product
```

EXAMPLE 3

What is the product of 76283 multiplied by 800? Notice that there are two zeros in the multiplier. You can now apply the short method of multiplication when there are zeros in the multiplier. Will you have 2 or 3 partial products? Let's compute to find out.



Therefore, the products of 76283 and 800 is 61026400.

Let's Try This

Practice solving for the products of the following. The first one has been done for you.

1. 90352 × 245

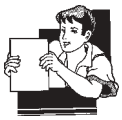
2. 47601 × 836

```
      1
    1 2
  1 2 1
  90352
×   245
------
 451760
361408
+180704
--------
22136240
```

3. 39610 × 702

4. 8769 × 400

Compare your answers with those in the *Answer Key* on page 39.



Let's Learn

Now that you have developed your skill in multiplication, let us try using this skill in solving word problems. Study the following examples.

EXAMPLE 1 In eight months, Aling Gina's toddler consumes 18 cans of powdered milk. If a can of powdered milk costs ₱589, how much does Aling Gina spend for the milk of her toddler for eight months?

SOLUTION

STEP 1 Write the given information.

a. ₱589–cost of a can of powdered milk

b. 18–number of cans of powdered milk consumed

STEP 2 Determine what is asked for.

Find out the total cost of the 18 cans of powdered milk if a can costs ₱589.

STEP 3 Compute for the answer.

To find the answer, multiply the cost of a can of powdered milk (₱589) by the number of cans of powdered milk consumed.

$$\begin{array}{r} {\scriptstyle 7\ 7\ \ } \\ 589 \\ \times\ 18 \\ \hline 4712 \\ +\ 589 \\ \hline 10602 \end{array}$$

Therefore, Aling Gina spent ₱10602 for the milk of her toddler for eight months.

EXAMPLE 2 In a 3-storey building, 40 air-conditioning units need to be installed. If an air-conditioning unit costs ₱12450, how much would the 40 units cost?

SOLUTION

STEP 1 Write the given information.

a. ₱12450–cost of one air-conditioning unit
b. 40–number of air-conditioning units to be purchased

STEP 2 Determine what is asked for.

Find how much 40 air-conditioning units would cost if a single unit costs ₱12450.

STEP 3 Solve for the answer.

To get the total cost, multiply the cost of a single unit (₱12450) by the total number of units to be purchased (40).

$$\begin{array}{r} {\scriptstyle 1\ \ 2}\\ 12450\\ \times\quad 40\\ \hline 498000 \end{array}$$

Therefore, the total cost of the 40 air-conditioning units is ₱498000.

Let's Try This

Solve the following word problems.

1. Mang Billy owns a *sari-sari* store. He bought a total of 250 kilos of rice to sell in his store. If he bought the rice at ₱17 per kilo, how much did Mang Billy spend for the rice?

STEP 1 Write the given information.

STEP 2 Determine what is asked for.

STEP 3 Compute the answer.

2. Mang David is an office clerk who earns ₱7680 a month. How much money will he earn in 36 months?

Compare your answers with those in the *Answer Key* on page 40.

Let's See What You Have Learned

A. Solve for the products of the following.

1. 6047×93
2. 49216×807

3. 59736×600

B. Solve the following word problems.

1. For a food catering job, Aling Mila needed 27 kilos of beef. If the price of beef is ₱118 per kilo, what is the total cost of the 27 kilos of beef?

2. The Department of Education will be providing a television set for each of 947 selected public schools. If a television set costs ₱13670, how much will the Department be spending for all the television sets?

Compare your answers with those in the *Answer Key* on pages 41 and 42. Did you get a perfect score? If you did, that's okay. Just review the parts of the lesson you did not understand very well before moving on to lesson 2.

Let's Remember

- In multiplying numbers by two- or three-digit multipliers, always start with the ones digit, moving on to the next place value.
- A two-digit multiplier yields two partial products and a three-digit multiplier yields three partial products.
- The partial products are added to get the final product.
- The product of a zero multiplier is written once only since any number multipled by zero is zero and adding zero to any number does not change the value of that number.

LESSON 2

Division of Whole Numbers

Division is an important operation we use in handling numbers. At times we need to split a large quantity into smaller groups (for example, we may divide the 156 apples into bunches of 12) or we need to divide a certain quantity equally (such as dividing an inheritance of ₱150000 among 5 siblings). Division is also used to find the average of a set of numbers.

After studying this lesson, you should be able to:

- perform division using two-to-three-digit divisors;
- solve for quotients with remainders;
- check whether the computed quotient is correct or not; and
- solve word problems using division.

Let's Solve This Problem

Aling Lolit needs to pack 432 apples in boxes. Each box should contain 12 apples. How many boxes does she need to pack all the apples?

To determine how many boxes she needs, divide the 432 (dividend) apples by 12 (divisor).

Step 1 $12\overline{)432}$ 36	• 4 ÷ 12 is not possible. Include the next digit, 3, in order to have 43. • 43 ÷ 12 = 3; write 3 above the digit 3 in the dividend. • 3 × 12 = 36; write 36 just below 43; draw a line below it.
Step 2 $12\overline{)432}$ -36 72	• 43 – 36 = 7; write 7 below 6; bring down 2. • 72 ÷ 12 = 6; write 6 above 2 in the dividend.

Step 3 $12\overline{)432}$ -36 72 -72 0	• 12 × 6 = 72; write 72 below 72. • 72 – 72 = 0.

Therefore, Aling Lolit needs 36 boxes to pack all the apples.

EXAMPLE 1

In the NFE Learning Center of Barangay Masagana, the learners were able to raise ₱8968 from selling old clothes, newspapers and bottles. If there were 38 learners, about how much did each learner raise?

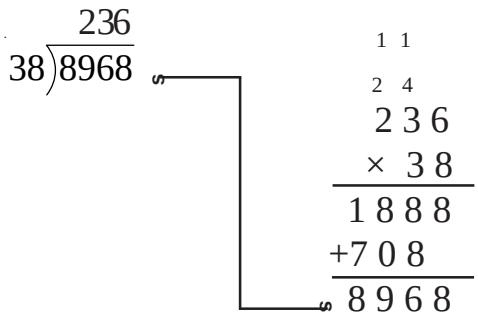
To find the answer, divide ₱8968 by the number of learners, 38.

Step 1 $38\overline{)8968}$ -76	• 8 ÷ 38 is not possible so include the next digit 9 to come up with 89. • 89 ÷ 38 = 2; write 2 above the digit 9 of the dividend. • 38 × 2 = 76; write 76 below 89 and draw a line just below 76.
Step 2 $38\overline{)8968}$ -76 136 -114	• 89 – 76 = 13; write 13 right below 89 and 76 and bring down digit 6 of the dividend. • 136 ÷ 38 = 3; write 3 above digit 6 of the dividend. • 38 × 3 = 114; write 114 below 136 and draw a line just below 114.
Step 3 $38\overline{)8968}$ -76 136 -114 228 -228 0	• 136 – 114 = 22; write 22 just below the line and bring down the last digit of the dividend. • 228 ÷ 38 = 6 and write 6 above digit 8 of the dividend. • 38 × 6 = 228; write 228 below that same number. • 228 – 228 = 0.

Therefore, each learner was able to raise ₱236.

Were you able to follow the step-by-step procedure? If not, go over it again and do it slowly.

Let's check if the quotient is correct. Multiply the quotient by the divisor. If the product is equal to the dividend, then the answer is correct.



The product is the same as the dividend. Therefore, the quotient is correct.

EXAMPLE 2

In one harvest season, 72380 baskets of fruits were gathered from the Francisco Farms. Assuming that 20 trucks were used to transport the fruits to the different markets and outlets, how many baskets of fruits did each truck transport?

To solve, divide 72380 baskets by the number of cargo trucks, 20.

We can have 2 solutions in solving the problem. Find out which one is easier for you.

SOLUTION 1:

```
    3619
20)72380
  –60
   123
 – 120
     38
   – 20
    180
   – 180
      0
```

- 7 ÷ 20 is not possible so include the next digit 2 to come up with 72.
- 72 ÷ 20 = 3; write 3 above the digit 2 of the dividend.
- 20 × 3 = 60; write 60 below 72 and draw a line just below it.
- 72 – 60 = 12; write 12 below 60 and bring down digit 3 of the dividend.
- 123 ÷ 20 = 6; write 6 above digit 3 of the dividend.
- 20 × 6 = 120; write 120 below 123 and draw a line just below it.
- 123 – 120 = 3; write 3 below digit 0 of 120 and bring down digit 8 of the dividend.
- 38 ÷ 20 = 1; write 1 above digit 8 of the dividend.
- 20 × 1 = 20; write 20 just below 38 and draw a line below it.
- 38 – 20 = 18; write 18 just below the line and bring down 0.
- 180 ÷ 20 = 9; write 9 above digit 0 of the dividend.
- 20 × 9 = 180; write 180 just below 180 and draw a line.
- 180 – 180 = 0.

SOLUTION 2: Before we perform the long division, let's divide 72380 and 20 by 10.

```
     7238
10)72380
  – 70
    23
  – 20
     38
  –  30
      80
  –   80
       0
```

Notice that the zero in the quotient was dropped. A shorter way of doing this, when there's a zero in both dividend and divisor, is to cancel out the zeros:

$$\frac{7238\not{0}}{1\not{0}} = 7238$$

Let's divide 20 by 10:

$$\frac{20}{10} \longrightarrow \frac{2\not{0}}{1\not{0}} = 2$$

Now we can perform the long division by cancelling out the zeros in both divisor and dividend.

```
            3619
          2)7238   ← 7 ÷ 2 = 3
3 × 2  →   – 6     ← 7 – 6 = 1
             12    ← 12 ÷ 2 = 6
6 × 2  →   – 12    ← 12 – 12 = 0
               3   ← bring down 3; 3 ÷ 2 = 1
1 × 2  →     – 2   ← 3 – 2 = 1; bring down 8
              18   ← 18 ÷ 2 = 9
9 × 2  →    – 18
               0   ← 18 – 18 = 0
```

Did we get the same quotient as in solution 1? Which solution is easier to perform? Why?

Let's check our answer.

```
      3619              3619
2Ø)7238Ø  ──┐         ×  20
            └──────→  72380
```

Let's Try This

Find the quotient and check your answer.

1. 5240 ÷ 40

3. 5968 ÷ 80

2. 34688 ÷ 64

Compare your answers with those in the *Answer Key* on pages 43 and 44.

Let's Study and Analyze

Dividing Numbers by Three-Digit Divisors

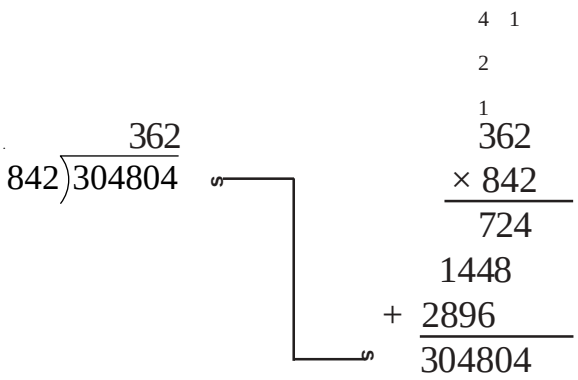
After learning how to perform division using two-digit divisors, we can now move on to division by three-digit divisors. Study and analyze the following examples.

EXAMPLE 1 Divide 304804 by 842.

SOLUTION:

	362	
	842)304804	← 3048 ÷ 842 = 3
842 × 3 →	–2526	← 3048 ÷ 2526 = 522; bring down 0
	5220	← 5220 ÷ 842 = 6
842 × 6 →	– 5052	← 5220 – 5052 = 168; bring down 4
	1684	← 1684 ÷ 842 = 2
842 × 2 →	–1684	
	0	← 1684 – 1684 = 0

Check:



EXAMPLE 2 Divide 147600 by 300.

For easier computation cancel out the zeros in the divisor and dividend by dividing both by 100.

$$\frac{147600}{100} \longrightarrow \frac{147600}{100} = 1476$$

$$\frac{300}{100} \longrightarrow \frac{300}{100} = 3$$

$$300\overline{)147600} \longrightarrow \begin{array}{r} 492 \\ 3\overline{)1476} \\ -12 \\ \hline 27 \\ -\ 27 \\ \hline 6 \\ -\ 6 \\ \hline 0 \end{array}$$

14 ÷ 3 = 4

14 – 12 = 2; bring down 7

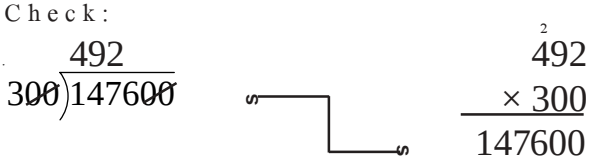
27 ÷ 3 = 9

27 – 27 = 0

bring down 6; 6 ÷ 3 = 2

6 – 6 = 0

Check:



Let’s Try This

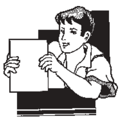
Find the quotient of the following and check your answer.

1. 473600 ÷ 800

3. 164400 ÷ 240

2. 83712 ÷ 327

Compare your answers with those in the *Answer Key* on pages 44 and 45.



Let’s Learn

Quotients With Remainders

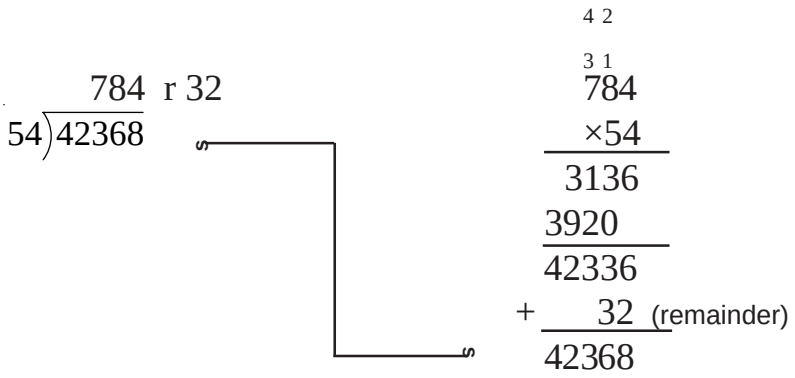
Now that you have practiced your skill in division, let us now learn how to solve for quotients that have remainders. The **remainder** is the number left undivided when the quotient is not an exact whole number. Study the following examples to better understand this concept.

EXAMPLE 1 Divide 42368 by 54.

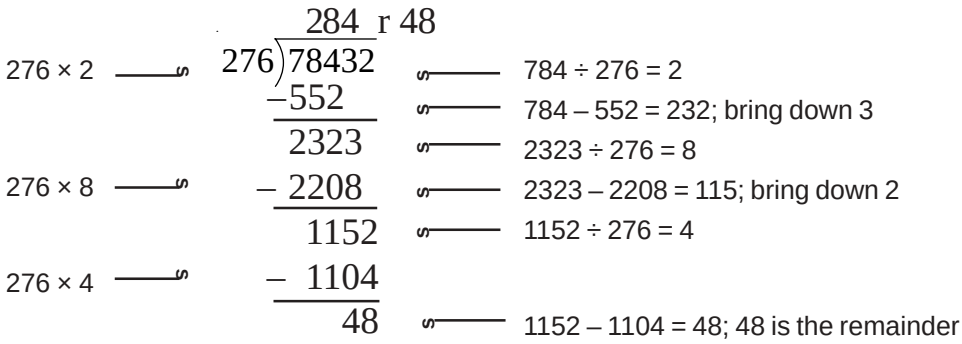
SOLUTION

		784 r 32	
54 × 7	→	54)42368	← 423 ÷ 54 = 7
		−378	← 423 – 378 = 45; bring down 6
		456	← 456 ÷ 54 = 8
54 × 8	→	– 432	← 456 – 432 = 24; bring down 8
		248	
54 × 4	→	– 216	
		32	← 228 – 216 = 32; 32 is the remainder

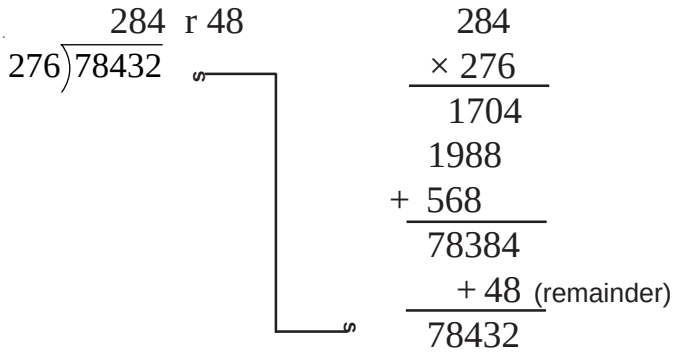
To check if the quotient is correct, follow the same procedure as in the previous examples. Don't forget to add the remainder to the final product.



EXAMPLE 2 Divide 78432 by 276.



Check:



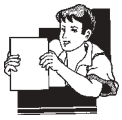
Let's Try This

Find the quotient and check your answer.

1. $59\overline{)42376}$

2. $405\overline{)85962}$

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



Let's Learn

Zero in the Quotient

Have you noticed that zero is a very tricky number? There are cases in division that when you forget to put zero in the quotient your answer turns out to be wrong.

Let's have some examples to prove that zero in the quotient is very important.

EXAMPLE 1

2506 roses were gathered for a flower festival. These were made into bouquets, each with 24 roses. How many bouquets were made?

To solve for the quotient, we divide the total number of roses gathered by the number of roses in each bouquet.

STEP 1 $24\overline{)2506}$ -24 10	• 2 ÷ 24 = is not possible. Include the next digit, 5, to come up with 25. • 25 ÷ 24 = 1; write 1 above the digit 5 in the dividend. • 1 × 24 = 24; write 24 below 25. • 25 ÷ 24 = 1; bring down 0.
STEP 2 $24\overline{)2506}$ -24 10 $-\ 0$ 106	• 10 ÷ 24 = 0; write 0 in the quotient. • 0 × 24 = 0; write 0 below 10. • 10 – 10 = 0; bring down 6.

STEP 3 $\begin{array}{r} 104 \\ 24\overline{)2506} \\ -24 \\ \hline 106 \\ -\ 0 \\ \hline 106 \\ -\ 96 \\ \hline 10 \end{array}$	• 106 ÷ 24 = 4; write 4 above the digit 6 • 4 × 24 = 96; write 96 below 106 • 106 – 96; 10 • 10 is the remainder.

There were 104 bouquets with 10 extra roses.

Do not forget to write 0 in the quotient. When the quotient is 104 and you forget to put 0 as a partial quotient, it becomes 14. Do you see the difference?

EXAMPLE 2 Divide 400 by 34.

STEP 1 $\begin{array}{r} 1 \\ 34\overline{)4080} \\ -34 \\ \hline 68 \end{array}$	• 4 ÷ 34 = is not possible. Include the next digit, 0, to come up with 40. • 40 ÷ 34 = 1; write 1 above digit 0 in 40. • 1 × 34 = 34; write 34 below 40 and draw a line just below it. • 40 ÷ 34 = 6; write 6 below 4. • Bring down 8.
STEP 2 $\begin{array}{r} 12 \\ 34\overline{)4080} \\ -34 \\ \hline 68 \\ -\ 68 \\ \hline 0 \end{array}$	• 68 ÷ 34 = 2; write 2 above the digit 8 in the dividend. • 2 × 34 = 68; write 68 below the same number. • 68 – 68 = 0.
STEP 3 $\begin{array}{r} 120 \\ 34\overline{)4080} \\ -34 \\ \hline 68 \\ -\ 68 \\ \hline 0 \end{array}$	• 0 divided by any number is 0. • Notice that after a difference of 0, there is still 0 in the ones place of the dividend. Write 0 in the quotient above the digit 0 in the dividend.

If you forget to put zero in the quotient, you will get 12.

Let' Try This

Divide the following.

1. $14\overline{)6024}$

3. $24\overline{)8400}$

2. $45\overline{)9270}$

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

Let's Study and Analyze

Let us now apply what we have learned in division in solving problems in everyday life. Study the following examples.

EXAMPLE 1 Mr. Lopez ows the bank ₱37392, including the interest. If Mr. Lopez plans to pay back the bank in 12 equal monthly installments, how much will he pay each month?

SOLUTION

STEP 1 Write the given information.

a. ₱37392—amount of money Mr. Lopez owes the bank

b. 12—number of equal monthly installments Mr. Lopez needs to complete his payment

STEP 2 Determine what is asked for.

Find out how much Mr. Lopez should pay each month to pay his loan.

STEP 3 Find the quotient.

Divide the total amount Mr. Lopez owes the bank (₱37392) by the number of equal monthly installments (12).

$$
\begin{array}{r}
3116 \\
12\overline{)37392} \\
-\,36 \\
\hline
13 \\
-\,12 \\
\hline
19 \\
-\,12 \\
\hline
72 \\
-\,72 \\
\hline
0
\end{array}
$$

Therefore Mr. Lopez needs to pay ₱3116 each month.

Check:

$$
\begin{array}{r}
3116 \\
12\overline{)37392}
\end{array}
\qquad
\begin{array}{r}
3116 \\
\times\ 12 \\
\hline
6232 \\
+\,3116 \\
\hline
37392
\end{array}
$$

EXAMPLE 2 A company purchased 30 chairs for its new office. If the company bought the chairs for a total price of ₱16095, what is the unit price?

SOLUTION

STEP 1 Write the given information.

a. ₱160950–total cost of the chairs purchased

b. 370–number of chairs purchased

STEP 2 Determine what is asked for.

Find out what is the unit price of the chairs that the company purchased.

STEP 3 Compute for the answer.

$$
\begin{array}{r}
435 \\
370\overline{)160950} \\
-148 \\
\hline
129 \\
-111 \\
\hline
185 \\
-185 \\
\hline
0
\end{array}
$$

Therefore the unit price of the chairs is ₱435.

Check:

$$
\begin{array}{r}
435 \\
370\overline{)160950}
\end{array}
\qquad
\begin{array}{r}
{\scriptstyle 1\ 1} \\
{\scriptstyle 2\ 3} \\
435 \\
\times 370 \\
\hline
30450 \\
+\ 13050 \\
\hline
160950
\end{array}
$$

Let's Try This

Try solving the following word problems.

1. Manuel is a college student studying in Manila. He is away from his family living in Pangasinan. He is given a monthly allowance of ₱2500 for his school and living expenses. How much should Manuel allot for his allowance each day if he would spend 20 days in a school month?

   STEP 1 Write the given information.

   STEP 2 Determine what is asked for.

   STEP 3 Compute the answer.

2. Mang Carlos owns a convenience store. He bought 24 cans of powdered milk which he plans to sell in his store. If he paid ₱5328 for the 24 cans, how much did he pay for each can of powdered milk?

Compare your answers with those in the *Answer Key* on pages 47and 48.

Let's See What You Have Learned

A. Solve for the quotient and check your answer.

1. $4658 \div 98$
2. $7371 \div 63$

3. 58504 ÷ 284

B. Solve the following problems.

1. A business partnership earned a net profit of ₱97428. If the profit is to be equally divided among 12 partners, how much does each of them get?

2. Mang Ben earns ₱6520 in a month. He is paid on a daily wage basis. If there are 20 working days in a month, how much is Mang Ben's daily wage?

Compare your answers with those in the *Answer Key* on pages 49 to 51. Did you get a perfect score? If you did, that's very good. If you did not, that's okay. Just review the parts of the lesson you did not understand very well before moving on to the next part of the module.

Let's Remember

- If the leftmost digit in the dividend is not divisible, include the next digit so that together with the leftmost digit it forms the first partial dividend.
- The remainder is the number left undivided when the quotient is not an exact whole number.
- To check whether the division is correct, multiply the quotient by the divisor. Add the remainder, if there is any, to the product. The answer should be equal to the dividend. If the answer is not equal to the dividend, then the computed quotient is incorrect.

You have reached the end of the module. Congratulations! Did you enjoy studying this module? Did you learn a lot from it? The following is a summary of its main points to help you remember them better.

Let's Sum Up

- In multiplying numbers by two- or three-digit multipliers, always start with the ones digit, moving on to the next place value.
- A two-digit multiplier has two partial products and a three-digit multiplier has three partial products.
- The partial products are added to get the final product.
- The product of a zero multiplier is written once only since any number multipled by zero is zero and zero added to any number does not change the value of that number.
- If the leftmost digit in the dividend is not divisible, include the next digit so that together with the leftmost digit it will form the first partial dividend.

- A remainder is the number left undivided when the quotient is not an exact whole number.
- To check whether the division is correct, multiply the quotient with the divisor. Add the remainder, if there is any, to the product of the quotient and divisor. The answer should equal the dividend. If the answer is not equal to the dividend, then the computed quotient is incorrect.

What Have You Learned?

A. Solve for the product.

1. 8263×97
2. 67048×846

B. Solve for the quotient.

1. $8234 \div 46$
2. $37083 \div 723$

C. Divide 2560 by 78 and check your answer.

D. Solve the following word problems.

1. A new office needs 16 computer tables. If a computer table costs ₱2671, how much is needed to purchase 16 computer tables?

2. Aling Nora bought 15 kilos of beef worth ₱1845. How much is a kilo of beef?

Compare your answers with those in the *Answer Key* on pages 51 to 53.

If your test score is:

7 Excellent! You have understood the lessons of the module well.

5–6 Review the lessons in the module which you did not understand.

0–4 You should study the whole module again.

Answer Key

A Let's See What You Already Know *(pages 2–3)*

A. 1.

$$\begin{array}{r} {\scriptstyle 4\ 3\ 4\ 3} \\ {\scriptstyle 5\ 4\ 5\ 4} \\ {\scriptstyle 2\ 2\ 2\ 2} \\ 29687 \\ \times\quad 563 \\ \hline 89061 \\ 178122\ \\ +148435\ \ \\ \hline 16713781 \end{array}$$

2.

$$\begin{array}{r} 83 \\ 684\overline{)56772} \\ 5472 \\ \hline 2052 \\ 2052 \\ \hline \end{array}$$

5677 ÷ 684 = 8

684 × 8 = 5472

5677– 5472 = 205; bring down 2

684 × 3 = 2052

2052 – 2052 = 0

B.

$$\begin{array}{r} 57\text{ r }28 \\ 73\overline{)4189} \\ 365 \\ \hline 539 \\ 511 \\ \hline 28 \end{array}$$

73 × 5 = 365

418 – 365 = 53; bring down 9

73 × 7 = 511

539 – 511 = 28—remainder

Check the answer:

$$\begin{array}{r} {\scriptstyle 3} \\ {\scriptstyle 2} \\ 73 \\ \times\ 57 \\ \hline 511 \\ +\ 365 \\ \hline 4161 \\ +\ 28 \\ \hline 4189 \end{array}$$

Since the sum is equal to the dividend, then the computed quotient is correct.

C. 1. **STEP 1** Write the given information.

a. ₱13690—monthly salary of Mr. Cruz

b. 24—number of months

STEP 2 Determine what is asked for.

Find the amount Mr. Cruz will earn after 24 months.

STEP 3 Compute the answer.

To find the answer, multiply Mr. Cruz's monthly salary (₱13690) by the number of months he is earning (24).

a. Put the numbers in column form, placing the larger number in the first row and the smaller number in the second row.

$$\begin{array}{r} 13690 \\ \times\quad 24 \\ \hline \end{array}$$

b. Get the product.

$$\begin{array}{r} 13690 \\ \times\quad 24 \\ \hline 54760 \\ +27380 \\ \hline 328560 \end{array}$$

Therefore, Mr. Cruz will earn ₱328560 in 24 months.

2. **STEP 1** Write the given information.

a. ₱28764—amount Mrs. Dizon owes to the bank

b. 12—number of monthly installments

STEP 2 Determine what is asked for.

Find out how much Mrs. Dizon needs to pay each month.

STEP 3 Compute the answer.

To find for the answer, divide the amount Mrs. Dizon owes the bank (₱28764) by the number of monthly installments (12).

$$
\begin{array}{r}
2397 \\
12\overline{)28764} \\
-\ 24 \\
\hline
47 \\
-\ 36 \\
\hline
116 \\
-\ 108 \\
\hline
84 \\
-\ 84 \\
\hline
\end{array}
$$

Therefore, Mrs. Dizon needs to pay the bank ₱2397 monthly for 12 months.

Let's Try This (page 6)

2.

$$
\begin{array}{r}
{\scriptstyle 4\ 1\ 1} \\
8723 \\
\times\quad 26 \\
\hline
52338 \\
+17446 \\
\hline
226798
\end{array}
$$

3.

$$
\begin{array}{r}
{\scriptstyle 1} \\
{\scriptstyle 4\ 6\ 4} \\
{\scriptstyle 2\ 3\ 2} \\
2586 \\
\times\quad 84 \\
\hline
10344 \\
+\ 20688 \\
\hline
217224
\end{array}
$$

Let's Try This (pages 12–13)

2.
$$\begin{array}{r} {\scriptstyle 6\ 4} \\ {\scriptstyle 2\ 1} \\ {\scriptstyle 4\ 3} \\ 47601 \\ \times\quad 836 \\ \hline 285606 \\ 142803 \\ +\ 380808 \\ \hline 39794436 \end{array}$$

3.
$$\begin{array}{r} {\scriptstyle 6\ 4} \\ {\scriptstyle 1\ 1} \\ 39610 \\ \times\ 702 \\ \hline 79220 \\ +\ 2772700 \\ \hline 27806220 \end{array}$$

4.
$$\begin{array}{r} {\scriptstyle 3\ 2\ 3} \\ 8769 \\ \times\ 400 \\ \hline 3507600 \end{array}$$

Let's Try This (pages 14–15)

1. **STEP 1** Write the given information.

   a. 250 kilos—total amount of rice Mang Billy bought

   b. ₱17—cost of rice per kilo

   STEP 2 Determine what is asked for.

   Find out the total cost of the 250 kilos of rice.

   STEP 3 Compute the answer.

   To find the answer, multiply the cost of a kilo of rice (₱17) by the number of kilos of rice bought (250).

$$\begin{array}{r} {\scriptstyle 3} \\ 250 \\ \times\ 17 \\ \hline 1750 \\ +250 \\ \hline 4250 \end{array}$$

   Therefore, the total cost of 250 kilos of rice is ₱4250.

2. **STEP 1** Write the given information.

   a. ₱7680—monthly salary of Mang David

   b. 36—number of months he earned

   STEP 2 Determine what is asked for.

   Find how much Mang David will earn in 3 months.

   STEP 3 Compute the answer.

   To find how much Mang David will earn in 3 months, multiply his monthly salary (₱7680) by the number of months (36).

$$\begin{array}{r} {\scriptstyle 2\ 2} \\ {\scriptstyle 4\ 4} \\ 7680 \\ \times\quad 36 \\ \hline 46080 \\ +\ 23040 \\ \hline 276480 \end{array}$$

   Therefore, Mang David will earn ₱276480 in 36 months.

Let's See What You Have Learned (pages 15–16)

A. 1.

$$\begin{array}{r} {\scriptstyle 4\ 6} \\ {\scriptstyle 1\ 2} \\ 6047 \\ \times\ \ 93 \\ \hline 18141 \\ +54423 \\ \hline 562371 \end{array}$$

2.

$$\begin{array}{r} {\scriptstyle 7\ 1\ 1\ 4} \\ {\scriptstyle 6\ 1\ 1\ 4} \\ 49216 \\ \times\ \ 807 \\ \hline 344512 \\ +3937280 \\ \hline 39717312 \end{array}$$

3.

$$\begin{array}{r} {\scriptstyle 5\ 4\ 2\ 3} \\ 59736 \\ \times\ \ 600 \\ \hline 35841600 \end{array}$$

C. 1. **STEP 1** Write the given information.

a. 27 kilos—weight of beef Aling Mila bought

b. ₱118—cost of beef per kilo

STEP 2 Determine what is asked for.

Find out the total cost of the 27 kilos of beef.

STEP 3 Compute the answer.

To find the answer, multiply the cost of a kilo of beef (₱118) by the number of kilos of beef bought (27).

$$\begin{array}{r} {\scriptstyle 1\ \ \ } \\ {\scriptstyle 1\ 5\ } \\ 118 \\ \times\ \ 27 \\ \hline 826 \\ +236\ \ \ \\ \hline 3186 \end{array}$$

Therefore, the total cost of 27 kilos of beef is ₱3186.

2. **STEP 1** Write the given information.

   a. ₱13670—unit price of the television sets

   b. 947—number of television sets

   STEP 2 Determine what is asked for.

   Find how much the Department of Education will be spending for the purchase of the television sets.

   STEP 3 Compute the answer.

   To find how much the Department will be spending, multiply the unit price of the television sets by the number of television sets to be acquired.

$$\begin{array}{r} {\scriptstyle 3\ 6\ 6} \\ {\scriptstyle 1\ 2\ 2} \\ {\scriptstyle 2\ 4\ 4} \\ 13670 \\ \times\ \ \ 947 \\ \hline 95690 \\ 54680\ \ \\ +123030\ \ \ \\ \hline 12945490 \end{array}$$

Therefore, the department will have to spend ₱12945490 for the television sets.

C. Lesson 2

Let's Try This (page 22)

1.

$40\overline{)5240}$

	131	
	$40\overline{)5240}$	5 ÷ 4 = 1
	$-\ 4$	5 – 4 = 1
	12	12 ÷ 4 = 3
4 × 3	$-\ 12$	12 – 12 = 0
	4	bring down 4; 4 ÷ 4 = 1
4 × 1	$-\ 4$	
	0	

Check:

$$\begin{array}{r} 131 \\ 40\overline{)5240} \end{array} \qquad \begin{array}{r} 131 \\ \times\ 40 \\ \hline 5240 \end{array}$$

2.

	542	
	$64\overline{)34688}$	346 ÷ 64 = 5
64 × 5	$-\ 320$	346 – 320 = 26; bring down 8
	268	268 ÷ 64 = 4
64 × 4	$-\ 256$	268 – 256 = 12 bring down 8
	128	128 ÷ 64 = 2
64 × 2	$-\ 128$	128 – 128 = 0
	0	

Check:

$$\begin{array}{r} 542 \\ 64\overline{)34688} \end{array} \qquad \begin{array}{r} 542 \\ \times\ 64 \\ \hline 2168 \\ +3252 \\ \hline 34688 \end{array}$$

3. $80\overline{)5968}$ $\quad \frac{80}{10} \rightarrow \frac{8\cancel{0}}{1\cancel{0}} = 8\cancel{0} \quad \frac{5968}{10} = 596.8$

- For easier computation, cancel out the zero in the divisor by dividing both divisor and dividend by 10.

$$
\begin{array}{rl}
 & 74.6 \\
8\cancel{0}\overline{)596.8} & \\
8 \times 7 \rightarrow \quad -56 & \text{59 ÷ 8 = 7} \\
\hline
 \quad 36 & \text{59 – 56 = 3; bring down 6} \\
8 \times 4 \rightarrow \quad -32 & \text{36 ÷ 8 = 4} \\
\hline
 \quad 48 & \text{36 – 32 = 4; bring down 8} \\
8 \times 6 \rightarrow \quad -48 & \text{48 ÷ 8 = 6} \\
\hline
 \quad 0 & \text{48 – 48 = 0}
\end{array}
$$

Check:

$$
\begin{array}{r}
74.6 \\
80\overline{)5968}
\end{array}
\qquad
\begin{array}{r}
74.6 \\
\times\ 80 \\
\hline
5968
\end{array}
$$

Let's Try This (page 24)

1. $473600 \div 800$

$\frac{473600}{100}$ $\quad \frac{473600}{100} = 4736 \quad \frac{800}{100} = 8$

$$
\begin{array}{rl}
 & 592 \\
8\overline{)4736} & \\
8 \times 5 \rightarrow \quad -40 & \text{47 ÷ 8 = 5} \\
\hline
 \quad 73 & \text{47 – 40 = 7; bring down 3} \\
8 \times 9 \rightarrow \quad -72 & \text{73 ÷ 8 = 9} \\
\hline
 \quad 16 & \text{73 – 72 = 1; bring down 6} \\
8 \times 2 \rightarrow \quad -16 & \text{16 ÷ 8 = 2} \\
\hline
 \quad 0 & \text{16 – 16 = 0}
\end{array}
$$

Check:

$$
\begin{array}{r}
592 \\
800\overline{)473600}
\end{array}
\qquad
\begin{array}{r}
592 \\
\times\ 800 \\
\hline
473600
\end{array}
$$

2.

```
          256
327 ) 83712
      –654          837 ÷ 327 = 2
       1831         837 – 654 = 183; bring down 1
      –1635         1831 ÷ 327 = 5
       1962         1831 – 1635 = 196; bring down 2
      – 1962        1962 ÷ 327 = 6
          0         1962 – 1962 = 0
```

327 × 2 →

327 × 5 →

327 × 6 →

Check:

```
          256
327 ) 83712

   1
 1 1
 3 4
   256
 × 327
  1792
  512
+768
 83712
```

3.

```
          685
240 ) 164400
      –144          164 ÷ 24 = 6
       204          164 – 144 = 20; bring down 4
      – 192         204 ÷ 24 = 8
       120          204 – 192 = 12; bring down 0
      – 120         120 ÷ 24 = 5
          0         120 – 120 = 0
```

24 × 6 →

24 × 8 →

24 × 5 →

Check:

```
          685
240 ) 164400
      – 144
        204
      – 192
         120
      – 120
            0

   685
 × 240
  2740
+1370
164400
```

Let's Try This (page 26)

1.

```
           718  r 14
       59)42376        423 ÷ 59 = 7
59 × 7 →  – 413        423 – 413 = 10; bring down 7
            107        107 ÷ 59 = 1
59 × 1 →  –  59        107 – 59 = 48; bring down 6
            486        48 ÷ 59 = 8
59 × 8 →  – 472
             14        486 – 472 = 14 (remainder)
```

Check:

```
   718  r 14         718
59)42376           ×  59
                    6462
                   3590
                   42362
                   +  14
                   42376
```

2.

```
             212 r 102
        405)85962        859 ÷ 405 = 2
405 × 2 →   – 810        859 – 810 = 49; bring down 6
              496        496 ÷ 405 = 1
405 × 1 →   – 405        496 – 405 = 91; bring down 2
              912        912 ÷ 405 = 2
405 × 2 →   – 810
              102        912– 810 = 102 (remainder)
```

Check:

```
      212  r 102        212
405)85962             × 405
                       1060
                      8480
                      85860
                      + 102
                      85962
```

Let's Try This (page 28)

1.
$$\begin{array}{r} 430 \text{ r } 4 \\ 14\overline{)6024} \\ -56 \\ \hline 42 \\ -42 \\ \hline 4 \\ -0 \\ \hline 4 \end{array}$$

2.
$$\begin{array}{r} 206 \\ 45\overline{)9270} \\ -90 \\ \hline 270 \\ -270 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 356 \\ 24\overline{)8400} \\ -72 \\ \hline 120 \\ -120 \\ \hline 0 \\ 0 \\ \hline \end{array}$$

Let's Try This (pages 30–31)

1. **STEP 1** Write the given information.

   a. ₱2500—Manuel's monthly allowance

   b. 20—number of school days in a month

   STEP 2 Determine what is asked for.

   Find out how much money Manuel must allot each day for 20 days if he must spend an equal amount per day.

STEP 3 Compute the answer.

To find the answer, divide Manuel's monthly allowance (₱2500) by the number of school days in a month (7).

$$
\begin{array}{r}
125 \\
20\overline{)2500} \\
-\ 2 \\
\hline
\ 5 \\
-\ 4 \\
\hline
\ 10 \\
-\ 10 \\
\hline
\ 0
\end{array}
$$

Therefore, Manuel should allot ₱125 a day for his school expenses.

2. **STEP 1** Write the given information.

a. ₱5328—total cost of the cans of powdered milk

b. 24—number of cans of powdered milk purchased

STEP 2 Determine what is asked for.

Find out the unit price of the powdered milk.

STEP 3 Compute the answer.

$$
\begin{array}{r}
222 \\
24\overline{)5328} \\
-48 \\
\hline
\ 52 \\
-\ 48 \\
\hline
\ 48 \\
-\ \ 48 \\
\hline
\ 0
\end{array}
$$

Therefore, the unit price of the powdered milk is ₱227.

Let's See What You Have Learned (pages 31–33)

A. 1.
$$\begin{array}{r} 47 \text{ r } 52 \\ 98\overline{)4658} \\ -\ 392 \\ \hline 738 \\ -\ 686 \\ \hline 52 \end{array}$$

Check:

$$\begin{array}{r} 47 \text{ r } 52 \\ 98\overline{)4658} \end{array} \qquad \begin{array}{r} {\scriptstyle 6\ \ } \\ {\scriptstyle 5\ \ } \\ 48 \\ \times\ 98 \\ \hline 376 \\ +\ 423 \\ \hline 4606 \\ +\ \ 52 \\ \hline 4650 \end{array}$$

2.
$$\begin{array}{r} 117 \\ 63\overline{)7371} \\ -\ 63 \\ \hline 107 \\ -\ 63 \\ \hline 441 \\ -\ 441 \\ \hline 0 \end{array}$$

Check:
$$\begin{array}{r} 117 \\ \times\ 63 \\ \hline 351 \\ +\ 702 \\ \hline 7371 \end{array}$$

3.
$$\begin{array}{r} 206 \\ 284\overline{)58504} \\ -\ 568 \\ \hline 1704 \\ -\ 1704 \\ \hline 0 \end{array}$$

Check:
$$\begin{array}{r} {\scriptstyle 1\ \ } \\ {\scriptstyle 5\ 2} \\ 284 \\ \times\ 206 \\ \hline 1074 \\ +\ 5680 \\ \hline 58504 \end{array}$$

B. 1. **STEP 1** Write the given information.

a. ₱97428—net profit business

b. 12—number of partners in the business.

STEP 2 Determine what is asked for.

Find out how much is the share of each partner from the net profit.

STEP 3 Compute the answer.

$$
\begin{array}{r}
8119 \\
12\overline{)97428} \\
-96 \\
\hline
14 \\
-\ 12 \\
\hline
22 \\
-\ 12 \\
\hline
108 \\
108 \\
\hline
0
\end{array}
$$

Therefore, each business partner gets ₱8119 as his/her share of the net profit.

2.. **STEP 1** Write the given information.

a. ₱6520—Mang Ben's monthly salary

b. 20—number of working days in a month

STEP 2 Determine what is asked for.

Find out how much Mang Ben's daily wage is.

STEP 3 Compute the answer.

To solve for the answer, divide Mang Ben's monthly salary (₱6520) by the number of working days (20)

$$
\begin{array}{r}
326 \\
20\overline{)6520} \\
-\ 6 \\
\hline
5 \\
-\ 4 \\
\hline
12 \\
-\ 12 \\
\hline
0
\end{array}
$$

Therefore, Mang Ben's daily wage is ₱326.

D. What Have You Learned? *(pages 34–35)*

A. 1.

$$
\begin{array}{r}
{\scriptstyle 2\ 5\ 2} \\
{\scriptstyle 1\ 4\ 2} \\
8263 \\
\times\ \ 97 \\
\hline
57841 \\
+74367 \\
\hline
801511
\end{array}
$$

2.

$$
\begin{array}{r}
{\scriptstyle 5\quad 6} \\
{\scriptstyle 2\quad 1\ 3} \\
{\scriptstyle 4\quad 4} \\
67048 \\
\times\ \ 846 \\
\hline
402288 \\
268192 \\
+\ 536384 \\
\hline
56722608
\end{array}
$$

B. 1.

```
      179
46 ) 8234
   – 46
     363
   – 322
     414
   – 414
       0
```

82 ÷ 46 = 1;46 × 1 = 46
82 – 46 = 36; bring down 3
363 ÷ 46 = 7; 46 × 7 = 322
363 – 322 = 41; bring down 4
414 ÷ 46 = 9; 46 × 9 = 414
414 – 414 = 0

2.

```
      51  r 210
15 ) 1845
   –3615
     933
   – 723
     210
```

3708 ÷ 723 = 5
723 × 5 = 3615
3708 – 3615 = 93; bring down 3
723 × 1 = 723
933 – 723 = 210

C. 1.

```
      32  r 64
78 ) 2560
   – 234
     220
   – 156
      64
```

78 × 3 = 234
256 – 234 = 22
bring down 0
78 × 2 = 156
220 – 156 = 64

Check:

```
    2
    1
     7 8   → divisor
   × 3 2   → quotient
   1 5 6
+ 2 3 4
 2 4 9 6
+    6 4
 2 5 6 0
```

Since the answer is equal to the dividend, then the computed quotient is correct.

D. 1. **STEP 1** Write the given information.

a. ₱2671—cost of a computer table

b. 16—number of computer tables to be purchased

STEP 2 Determine what is asked for.

Find the amount needed to purchase 16 computer tables.

STEP 3 Compute the answer.

To find the answer, multiply the unit cost of a computer table (₱2671) and the number of computer tables (16) to be purchased.

$$\begin{array}{r} {\scriptstyle 4\ 4} \\ 2671 \\ \times\quad 16 \\ \hline 16026 \\ 2671 \\ \hline 42736 \end{array}$$

Therefore, 16 computer tables cost ₱42736.

2. **STEP 1** Write the given information.

a. ₱1845—total cost of the beef

b. 15—number of kilos of beef bought

STEP 2 Determine what is asked for.

Find out how much a kilo of beef is.

STEP 3 Compute the answer.

To find the answer, divide the total cost of the beef by the number of kilos bought.

$$\begin{array}{r|l} & 123 \\ \hline 15 & 1845 \\ -\ 15 & \\ \hline 34 & \\ -\ 30 & \\ \hline 45 & \\ -\ 45 & \\ \hline 0 & \end{array}$$

15 × 1 = 15

18 – 15 = 3; bring down 4 = 34

34 ÷ 15 = 3

15 × 2 = 30

34 – 30 = 4; bring down 5

45 ÷ 15 = 3; 15 × 3 = 45

45 – 45 = 0

This means that a kilo of beef costs ₱123.

Glossary

Dividend The number being divided.

Divisor The number that divides another.

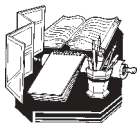
Multiplicand The number to be multiplied by another number.

Multiplier The number that multiplies another number.

Product The result when you multiply a number by another.

Quotient The result when you divide a number by another.

Remainder The number left undivided when the quotient is not an exact whole number.



Reference

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