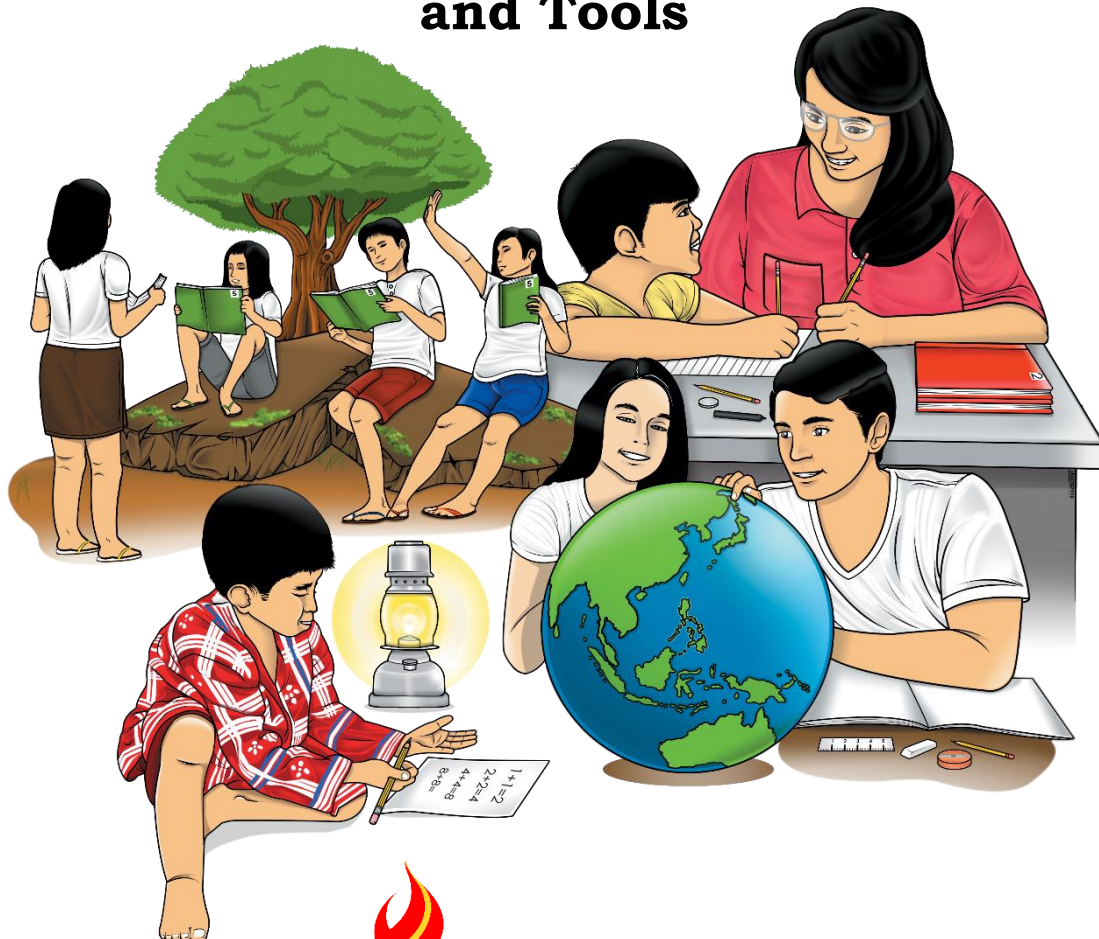


Mathematics

Quarter 2 – Module 6: Solving Routine or Non-routine Problems Involving Addition and Subtraction of Decimal Numbers Including Money Using Appropriate Problem-Solving Strategies and Tools



Mathematics– Grade 5
Alternative Delivery Mode

Quarter 2 – Module 6: Solving Routine or Non-routine Problems Involving Addition and Subtraction of Decimal Numbers Including Money Using Appropriate Problem Solving Strategies and Tools
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Mathematics

Quarter 2 – Module 6:

**Solving Routine or Non-routine
Problems Involving Addition and
Subtraction of Decimal Numbers
Including Money Using Appropriate
Problem-Solving Strategies and
Tools**

Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests, and read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Good luck and happy learning!



What I Need to Know

In this module, you are going to test your ability in solving routine or non-routine problems involving addition and subtraction of decimal numbers including money. Following the steps and using different strategies will help you solve the problems.

After going through this module, you are expected to:

Solve routine or non-routine problems involving addition and subtraction of decimal numbers including money using appropriate problem-solving strategies and tools.

M5NS-Ilc-108.1



What I Know

Directions: Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.

- 1) Leon has ₱4,522.08 savings in his bank account. He deposits another ₱875.50, and then deposits another ₱300.75 the following month. How much savings he got in his account?
A. ₱3,588.03 B. ₱4,658.50 C. ₱5,658.30 D. ₱5,658.33
- 2) Rodolfo had ₱368.29 money. His mother gave him ₱253.46 and his sister gave him ₱57.39. How much money does he have now?
A. ₱675.50 B. ₱678.15 C. ₱679.14 D. ₱778.14
- 3) Maria had saved ₱469.38 from her Christmas presents last December. She gave ₱99.37 to Mario and ₱124.93 to Martha. How much money is left with her?
A. ₱99.37 B. ₱124.93 C. ₱224.30 D. ₱245.080
- 4) Tanya bought a book for ₱152.75, a pen for ₱45.25 and a bar of chocolate for ₱28.75. How much amount did she spend for the items she bought?
A. ₱225.75 B. ₱226.75 C. ₱226.76 D. ₱227
- 5) Nancy sold a pencil case to her classmate for ₱51.25. She was given a ₱100.00 bill. How much did Nancy give to her classmate for her change?
A. ₱48.75 B. ₱48.80 C. ₱49.70 D. ₱51.00

- 6) Wilma had ₱305.80 money in her bank. She deposited ₱250.25 more and then withdrew ₱317.50 from her account. What is the balance now in her account?
- A. ₱235.50 B. ₱238.55 C. ₱556.00 D. ₱556.05
- 7) Lando wants to buy a chess book guide costing ₱600.00. He has ₱475.25 only in his purse. How much more money does he need to purchase the book?
- A. ₱124.75 B. ₱125.05 C. ₱238.50 D. ₱238.55
- 8) Mrs. Santos is trying to bake cookies for her daughter's birthday party. She needs to buy one-fourth kilogram of white flour for ₱20.75, one-fourth kilogram of oatmeal flour for ₱55.25, and one-half cup of almond flour for ₱87.05. How much will she pay for all the types of flour she needed?
- A. ₱164.00 B. ₱163.10 C. ₱163.05 D. ₱165.50
- 9) Cristina and her mother ate in a carenderia and ordered one serving of beef bulalo for ₱45.50, chopseuy for ₱42.50, and a platter of rice for ₱35.75. Her mother gave the cashier ₱1,000.00 bill. How much is their change?
- A. ₱876.20 B. ₱876.25 C. ₱875.50 D. ₱900.25
- 10) Rolando deposited ₱8,780.00 into a savings account. After six months, his money earned an interest of ₱105.36. How much was in the account then?
- A. ₱8,885.36 B. ₱8,885.30 C. ₱8,885.00 D. ₱8,880.36

Solving Routine and Non-Routine Problems

The Routine word problem is a type of problem in which there is an immediate solution, it involves using at least one of the four arithmetic operations.

The Non-routine problem solving is a creative problem solving that requires some degree of creativity, it typically does not have an immediately apparent strategy for solving them. It prepares the learners for real-life problem-solving. Real-life problems do not come with prescribed steps on how to solve them.



What's In

Before you start with this lesson, you should have mastery in addition and subtraction of decimal numbers.

Addition of Decimals

Step 1: Write the decimal numbers vertically. Align the decimal points so that all the whole numbers are aligned on the left side of the decimal point and all the decimal numbers are aligned on the right side of the decimal point. The digits with the same place values should be aligned.

$$\begin{array}{r} 546.34 \\ + \quad 8.9 \\ \hline \end{array}$$

Step 2: Add zeros after the last digit at the right of the decimal point so that all of the numbers have the same number of decimal places.

$$\begin{array}{r} 546.34 \\ + \quad 8.90 \\ \hline \end{array}$$

Step 3: Add the decimal numbers. Starting on the left most part numbers going to the right. Regroup if necessary.

$$\begin{array}{r} \\ 546.34 \\ + \quad 8.90 \\ \hline 555.24 \end{array}$$

Step 4: Put the decimal point on the answer. It should be aligned with the decimal point of the given numbers.

$$\begin{array}{r} 546.34 \\ + \quad 8.90 \\ \hline 555.24 \end{array}$$

Subtraction of Decimals

Step 1: Write the decimal numbers vertically. Align the decimal points so that all the whole numbers are aligned on the left side of the decimal point and all the decimal numbers are aligned on the right side of the decimal point. The digits with the same place values should be aligned.

$$\begin{array}{r} 546.34 \\ - 8.9 \\ \hline \end{array}$$

Step 2: Add zeros after the last digit at the right of the decimal point so that all of the numbers have the same number of decimal places.

$$\begin{array}{r} 546.34 \\ - 8.90 \\ \hline \end{array}$$

Step 3: Subtract the decimal numbers. Starting on the left most part numbers going to the right. Regroup if necessary.

$$\begin{array}{r} 151 \\ 546.34 \\ - 8.90 \\ \hline 537.44 \end{array}$$

Step 4: Put the decimal point on the answer. It should be aligned with the decimal point of the given numbers.

$$\begin{array}{r} 546.34 \\ - 8.90 \\ \hline 537.44 \end{array}$$



What's New

Read and comprehend well the word problems. To answer them correctly you should master the skill of identifying the things what are being asked in each problem.

Problem 1: (Example of solving routine word problem)

A farmer named Pablo is selling all of his crops for Php 13,490.50. When he brought his crops to Rawis Fair Market in Calbayog City, a businessman took all of his crops and only paid Php 5,940.70. How much is the businessman's balance to pay to Pablo?

Step 1: Identify what is asked.

Step 2: List down what are given.

Step 3: Identify the hidden question, if there is any.

Step 4: Identify the operation needed to solve the problem.

Step 5: Write the mathematical sentence that will be used to solve the problem

Step 6: Solve the problem.

Problem 2: (Example of solving non-routine word problem)

Pacita earned Php 469.38 from selling camote tops and ferns. She gave Php 99.37 to her younger brother Paolo and Php 124.93 to her elder sister Perla for their project needs at school. How much money was left for Pacita?

You may compare your solution on the next page.



What Is It

Solution of Example Problem 1:

A farmer named Pablo is selling all of his crops for Php 13,490.50. When we he brought his crops to Rawis Fair Market in Calbayog City, a businessman took all of his crops and only paid Php 5,940.70. How much is the businessman's balance to pay to Pablo?

Step 1: Identify what is asked.

- The amount of money the businessman still has to pay to Pablo

Step 2: List down what are given.

- Php 13,490.50 – The price of Pablo's crops
- Php 5,940.70 – The amount of money the businessman paid

Step 3: Identify the hidden question, if there is any.

- There is no hidden question in the problem

Step 4: Identify the operation needed to solve the problem.

- Subtraction

Step 5: Write the mathematical sentence that will be used to solve the problem

$$N = 13,490.50 - 5,940.70$$

N = the amount of money the businessman still has to pay to Pablo.

- **Step 6:** Solve the problem.

$$\begin{array}{r} 13,490.50 \\ - 5,940.70 \\ \hline 7,549.80 \end{array}$$

- $N = 7,549.80$ = the amount of money the businessman still has to pay to Pablo.

Therefore,

- The businessman still needs to pay Pablo the amount of Php 7, 549.80

Solving Non-routine Word Problems

Non-routine problems can be solved in multiple ways and with a variety of strategies. Different strategies are used in solving non-routine word problems.

- Look for a pattern
- Guess and check
- Work backward
- Make a model/ visualize the problem
- Break up the problem into smaller parts and solve each part

Solution of Example Problem 2:

Pacita earned Php 469.38 from selling camote tops and ferns. She gave Php 99.37 to her younger brother Paolo and Php 124.93 to her elder sister Perla for their project needs at school. How much money was left for Pacita?

Step 1: Identify what is asked.

- The amount of money left for Pacita

Step 2: List down what are given.

- Php 469.38 – The amount of Pacita’s earning from selling vegetables
- Php 99.37 - The amount given to Paolo
- Php 124.93 - The amount given to Perla

Step 3: Identify the hidden question, if there is any.

- The total amount of money given to her siblings

Step 4: Identify the operation needed to solve the problem.

- Addition and Subtraction

Step 5: Write the mathematical sentence that will be used to solve the problem

$$N = 469.38 - (99.37 + 124.93)$$

N = the amount of money left for Pacita.

Step 6: Solve the problem.

Add first the total amount given out by Pacita to satisfy the hidden question (Refer to Step 3)

$$\begin{array}{r} 111 \\ 199.37 \\ + 124.93 \\ \hline 224.30 \end{array} \quad \begin{array}{l} \text{- The total amount of money given to her} \\ \text{siblings} \end{array}$$

Then subtract

$$\begin{array}{r} 469.38 \\ - 224.30 \\ \hline 245.08 \end{array}$$

- $N = 245.08$

Therefore,

- The amount of money left for Pacita is Php 245.08



What's More

Independent Activity 1

Read the problem carefully and answer the following questions.

Cristina wants to buy shoes for her sister as a birthday present. She already saved Php 555.50. If the shoes costs Php 1,465.75, how much more does Cristina still needs to buy the shoes?

Step 1: Identify what is asked.

Step 2: List down what are given.

Step 3: Identify the hidden question, if there is any.

Step 4: Identify the operation needed to solve the problem.

Step 5: Write the mathematical sentence that will be used to solve
the problem

Step 6: Solve the problem.

Independent Activity 2

Read each problem carefully and answer the following questions.

- 1) Eric earned Php 1,305.40 from working at a restaurant. He gave Php 350.00 to his mother and paid Php 524.60 for their electric bill. How much money was left for Eric's savings?
- 2) Karla went to the store and bought a strawberry cupcake worth Php 25.45, a black forest cupcake worth Php 50.24, and a chocolate cupcake worth Php 15.67. Karla used a coupon where Php 15.00 was deducted from the total amount. How much was the total price after the deduction?
- 3) Vicky auctioned some antique wares to raise money for charity. She auctioned 3 items. The first item raised Php 10,940.50. The second item raised Php 40,590.62. If she was able to raise a total of Php 113, 590.85, how much money did she raise with the third item?

- 4) Robin's bank account has Php 1,200.57. He earned Php 590.00 by working at an ice cream shop and Php 460.93 by tutoring his classmates. If he deposits all his earnings, how much money would his bank account have in total?
- 5) Katherine wants to buy a present for her best friend's birthday. The present Katherine wants to buy is worth Php 394.75. Katherine's mother already gave her Php 125.25. Her piggy bank contains Php 214.80. If she adds all the money she has, how much more does she need to be able to buy the present?



What I Have Learned

To solve routine word problems, the following steps are used:

Step 1: Identify what is asked.

Step 2: List down what are given.

Step 3: Identify the hidden question, if there is any.

Step 4: Identify the operation needed to solve the problem.

Step 5: Write the mathematical sentence that will be used to solve the problem

Step 6: Solve the problem.

Different strategies are used in solving non-routine word problems.

- Look for a pattern
- Guess and check
- Work backward
- Make a model/ visualize the problem
- Break up the problem into smaller parts and solve each



What I Can Do

A. Solve the problem below

- 1) Pedro lives in far flung barangay of Calbayog City. Sometimes he went to school early with an empty stomach. Upon arriving at school, that's the time that he will look for something to eat before the classes start. Today, he spent ₱120.50 for his food in the morning and ₱150.25 during lunchtime. How much did Pedro spend in total for his food?

Step 1: What is asked? _____

Step 2: What are given? _____

Step 3: What is the hidden question, if there is any?

Step 4: What operation is needed to solve the problem?

Step 5: What is the mathematical sentence that will be used to solve the problem?

Step 6: Solution of the problem.

- 2) Joanna's Car Wash Shop operates daily before the Enhanced Community Quarantine (ECQ) took place. But during the quarantine period the owners closed the shop as part of the protocol for small establishments and businesses. But when they received the electric bill last month, it declared an amount of ₱5,391.50. This month's electric bill is ₱3,150.25. How much more did they pay last month than this month's electric bill?



Assessment

Directions: Solve the following word problems. Choose the letter of the best answer. Write the chosen letter and your solutions on a separate sheet of paper.

- 1) Roy recorded the number of liters of gasoline that he used for three days. He recorded 11.2 liters, 10.8 liters, and 14.2 liters. How many liters of gasoline did he use in all?
A. 30.2 liters B. 36.2 liters C. 36.2 liters D. 38.2 liters
- 2) Talahib rice company produced 2000 kilograms of rice. How many kilograms of rice was left after selling 1475.5 kilograms?
A. 500.5 kilos B. 522.5 kilos C. 524.5 kilos D. 528.5
- 3) Benjie spent ₱878.50 for the spare parts that were needed for the repair of his motorcycle. How much of his money was left if he originally had ₱950.00?
A. ₱70.50 B. ₱71.50 C. ₱71.55 D. ₱75.50
- 4) The sum of three decimal numbers is 496.28. Two decimal numbers are 238.94 and 110.09. Find the third decimal.
A. 147.25 B. 148.35 C. 606.37 D. 735.25
- 5) Cagbayang Central Elementary School needs additional funds for the renovation of their computer laboratory. To answer their problem, they conducted a fund raising activity for a week. They earned ₱1,820.75 on the first day, ₱2,947.50 on the second day, and ₱1,932.25 on the third day. How much did they earn for the first three days of the fund raising activities?
A. ₱6700.20 B. ₱6700.50 C. ₱6900.50 D. ₱7700.50
- 6) Anthony bought a ticket for the roller coaster ride for ₱47.50 discounted price. He paid at the ticket booth ₱100 bill. While he was counting his change, he dropped a few coins and counted that he only got ₱40.25 left. How much did Anthony drops?
A. ₱52.50 B. ₱40.25 C. ₱15.00 D. ₱12.25
- 7) Joey has Php545.95 savings. He gave Php290.80 to his brother. From the remaining money, he gave Php95.50 to his sister, how much money was left to Joey?
A. ₱79.50 B. ₱386.30 C. ₱836.75 D. ₱159.65
- 8) Rodrigo, Esmael, and Romy have a combined height of 8.7 meters. If Rodrigo is 2.31 meters tall and Esmael is 2.6 meters tall, how tall is Romy?
A. 5.79 meters B. 4.91 meters C. 3.79 meters D. 2.79 meter
- 9) Ricky and Samuel had dinner at Bay Park Restaurant. Ricky's ordered meal cost Php 240.27, and Samuel's cost Php215.40. How much did the two meals cost altogether?
A. ₱450.67 B. ₱455.65 C. ₱455.67 D. ₱550.67
- 10) Bobby's house is 3.5 meters taller than Ted's house and Bonnie's house is 1.2 meters shorter than Ted's house. How tall is Bobby's house than Ted's house?
A. 1.3 meters B. 2.3 meters C. 4.7 meters D. 5.8 meters



Additional Activities

Directions: Read and analyze the problems. Solve what is being asked.

- 1) The length of the ribbon is 1.28 meters. The length of the rope is 2.74 meters longer than the ribbon. What is the length of the rope?
- 2) A pail holds 5.2 liters of water. A bottle holds 3.0 liters less water than the pail. What is the volume of the water in the bottle?
- 3) Helen bought three tubs of peanut butter in different sizes. The sum of the prices of the three tubs of peanut is Php496.28. Two tubs are Php238.94 and the other is Php110.09. Find the price of the third tub.



Answer Key

<p>Additional Activities</p> <p>The length of the rope is 4.02 meters</p> <p>The volume of the water in the bottle is 1.3 liters</p> <p>The price of the third tub of peanut butter is Php147.25</p>	<p>What I Can Do</p> <p>A.</p> <p>1.</p> <p>Step 1: The amount of money Pedro spent for food.</p> <p>Step 2: Money spent in the morning – Php 120.50</p> <p>Money spent at lunch time – Php 150.25</p> <p>Step 3: No hidden question</p> <p>Step 4: Addition</p> <p>Step 5: $N = 120.50 + 150.25$</p> <p>Step 6: Pedro spent Php 270.75 for food</p> <p>2.</p> <p>Step 1: The amount of more than what Joanna's Car Wash Shop pay last month than this month's electric bill?</p> <p>Step 2: Last month's bill – ₱5,391.50</p> <p>This month's bill – ₱3,150.25</p> <p>Step 3: No hidden question</p> <p>Step 4: Subtraction</p> <p>Step 5: $N = 5,391.50 + 3,150.25$</p> <p>Step 6: They paid Php 2,241.25 more for last's month bill</p>
<p>Assessment</p> <p>1. A</p> <p>2. C</p> <p>3. C</p> <p>4. A</p> <p>5. B</p> <p>6. D</p> <p>7. A</p> <p>8. D</p> <p>9. B</p> <p>10. B</p>	<p>What I know</p> <p>1. C</p> <p>2. A</p> <p>3. D</p> <p>4. B</p> <p>5. A</p> <p>10. A</p> <p>What's More</p> <p>Independent Activity 1</p> <p>Step 1: The amount of money Cristina still needed to buy the shoes</p> <p>Step 2: Shoe cost - Php 1,464.75</p> <p>Cristina's savings - Php 542.68</p> <p>Step 3: No hidden question</p> <p>Step 4: Subtraction</p> <p>Step 5: $N = 1,464.75 - 542.68$</p> <p>Step 6: Cristina still needs Php 922.07 to buy the shoes</p> <p>Independent Activity 2</p> <p>1. Php 430.8</p> <p>2. Php 76.36</p> <p>3. Php 62,059.73</p> <p>4. Php 2251.5</p> <p>5. Php 54.7</p>

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