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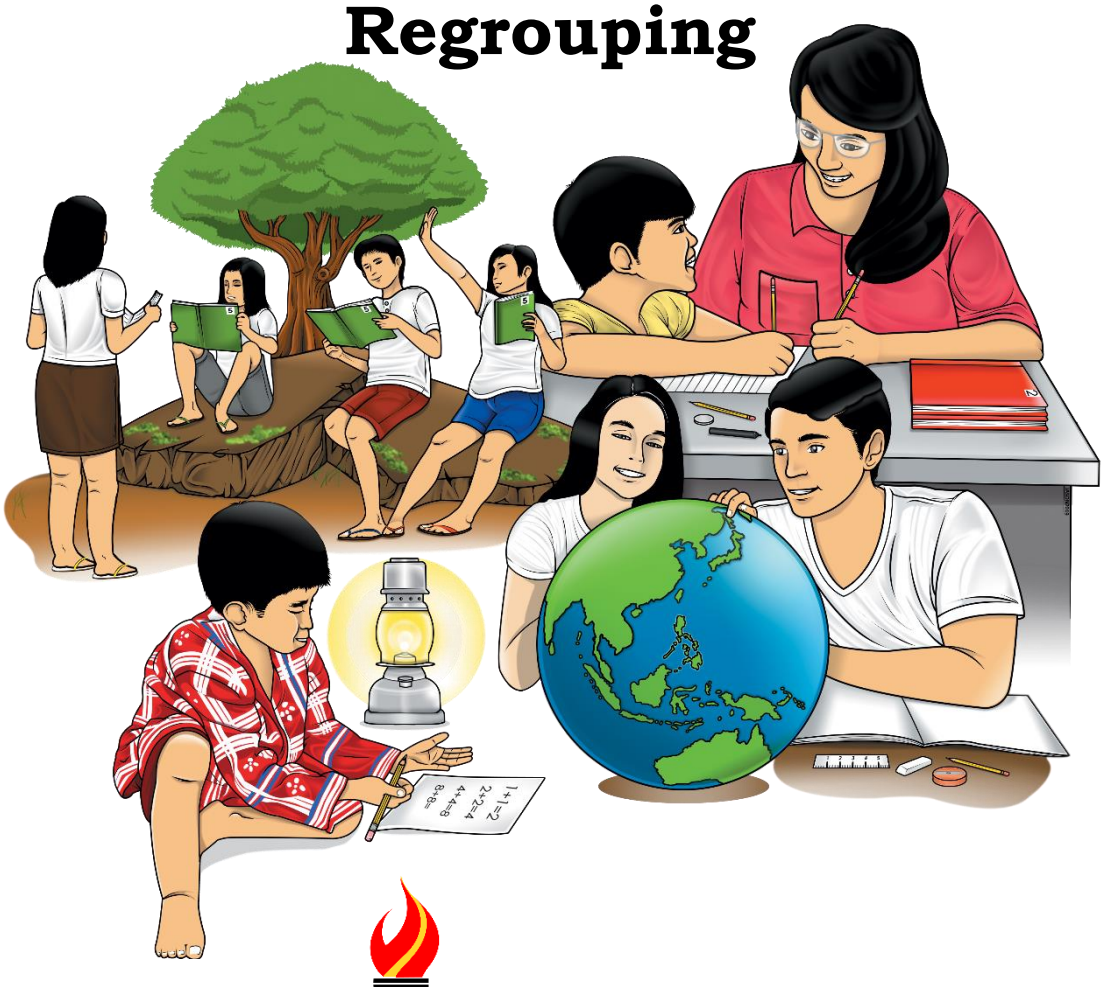
DEPARTMENT OF EDUCATION

Mathematics

Quarter 1 – Module 6: Subtraction of Decimals And Mixed Decimals Through Ten Thousandths Without and With Regrouping



ALTERNATIVE DELIVERY MODE
ADM

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Mathematics – Grade 6
Alternative Delivery Mode
Quarter 1 – Module 6: Subtraction of Decimals Through Ten Thousandths Without and With Regrouping
First Edition, 2020

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Published by the Department of Education
Secretary: Leonor Magtolis Briones
Undersecretary: Diosdado M. San Antonio

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Printed in the Philippines by _____

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Mathematics

Quarter 1 – Module 6: Subtraction of Decimals And Mixed Decimals Through Ten Thousandths Without and With Regrouping

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Introductory Message

For the facilitator:

Welcome to the Mathematics 6 Alternative Delivery Mode (ADM) Module on Subtraction of Decimals Through Ten Thousandths Without and With Regrouping!

This module was collaboratively designed, developed and reviewed by educators both from public and private institutions to assist you, the teacher or facilitator in helping the learners meet the standards set by the K to 12 Curriculum while overcoming their personal, social, and economic constraints in schooling.

This learning resource hopes to engage the learners into guided and independent learning activities at their own pace and time. Furthermore, this also aims to help learners acquire the needed 21st century skills while taking into consideration their needs and circumstances.

In addition to the material in the main text, you will also see this box in the body of the module:

Notes to the Teacher

This contains helpful tips or strategies that will help you in guiding the learners.

As a facilitator, you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their own learning. Furthermore, you are expected to encourage and assist the learners as they do the tasks included in the module.

For the learner:

Welcome to the Mathematics 6 Alternative Delivery Mode (ADM) Module on Subtraction of Decimals Through Ten Thousandths Without and With Regrouping! This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts and corresponding icons:

What I Need to Know	This will give you an idea of the skills or competencies you are expected to learn in the module.
What I Know	This part includes an activity that aims to check what you already know about the lesson to take. If you get all the answers correct (100%), you may decide to skip this module.
What's In	This is a brief drill or review to help you link the current lesson with the previous one.
What's New	In this portion, the new lesson will be introduced to you in various ways; a story, a song, a poem, a problem opener, an activity or a situation.
What is It	This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.
What's More	This comprises activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.
What I Have Learned	This includes questions or blank sentence/paragraph to be filled in to process what you learned from the lesson.
What I Can Do	This section provides an activity which will help you transfer your new knowledge or skill into real life situations or concerns.
Assessment	This is a task which aims to evaluate your level of mastery in achieving the learning competency.
Additional Activities	In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned.

Answer Key — This contains answers to all activities in the module.

At the end of this module you will also find:

References — This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!

What I Need to Know

This module was designed and written with you in mind. It is here to help you master the skills in subtracting decimals. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

The module is divided into two lessons, namely:

- Lesson 1 – Subtracting Decimals and Mixed Decimals through Ten Thousandths without Regrouping
- Lesson 2 – Subtracting Decimals and Mixed Decimals through Ten Thousandths with Regrouping

After going through this module, you are expected to:

1. subtract decimals and mixed decimals through ten thousandths without regrouping; **(M6NS-Id-106.2)**
2. subtract decimals and mixed decimals through ten thousandths with regrouping; **(M6NS-Id-106.2)** and
3. solve one or more steps routine and non-routine problems involving addition and/or subtraction of decimals and mixed decimals using appropriate problem-solving strategies and tools. **(M6NS-Id-108.2)**

What I Know

Find the value of **N**. Write in column and subtract. Write your answers on your answer sheet.
Example: 89.3926 – 16.0103 = N

Solution:

$$\begin{array}{r} 89.3926 \\ -\ 16.0103 \\ \hline 73.3823 \end{array}$$

1) 23.6739 – 2.3219 = N

2) 56.9035 – 22.8012 = N

3) 229.5629 – 118.0019 = N

4) 5 009.2896 – 1 008.1154 = N

5) 59.0391 – 48.02 = N

6) 31.5069 – 21.4041 = N

7) 78.0919 – 23.0010 = N

8) 52.7306 – 3.0004 = N

9) 639.7901 – 308.680 = N

10) 56.9270 – 22.9170 = N

Lesson 1 Subtracting Decimals and Mixed Decimals through Ten Thousandths Without Regrouping

In this lesson you will learn how to subtract decimals through ten thousandths without regrouping.

What's In

Subtract the following. Write your answers on your answer sheet.

1) $0.973 - 0.540$

2) $0.489 - 0.270$

3) $9.698 - 6.540$

4) $298.830 - 120.200$

What's New

Read the problem and try to understand it.

> Joyce loves to take a walk from home to school every morning. The distance of school from their home is 2.6793 kilometers. Before going to school, her mother asked her to deliver the bread to her aunt on the next block which is 1.3201 kilometers away from their home. How many kilometers she needs to walk from her aunt's house to school?

What is It

What is asked in the problem? Can you solve the given problem? What process will you use to find the answer?
Here are the steps to solve it.

- Write and arrange the numbers vertically. Align the decimal points.

$$\begin{array}{r} 2.6793 \\ -\ 1.3201 \\ \hline \end{array}$$

- Subtract the ten thousandths place.

$$\begin{array}{r} 2.6793 \\ -\ 1.3201 \\ \hline \mathbf{2} \end{array} \qquad 3-1=2$$

- Subtract the thousandths place.

$$\begin{array}{r} 2.6793 \\ -\ 1.3201 \\ \hline \mathbf{92} \end{array} \qquad 9-0=9$$

- Subtract the hundredths place.

$$\begin{array}{r} 2.6793 \\ -\ 1.3201 \\ \hline \mathbf{592} \end{array} \qquad 7-2=5$$

- Subtract the tenths place.

$$\begin{array}{r} 2.6793 \\ -\ 1.3201 \\ \hline \mathbf{3592} \end{array} \qquad 6-3=3$$

- Place the decimal point.

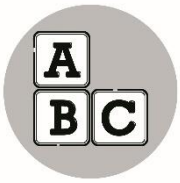
$$\begin{array}{r} 2.6793 \\ -\ 1.3201 \\ \hline \mathbf{.3592} \end{array}$$

- Subtract the whole numbers. Subtract the ones.

$$\begin{array}{r} 2.6793 \\ -\ 1.3201 \\ \hline \mathbf{1.3592} \end{array} \qquad 2-1=1$$

So, 2.6793 – 1.3201 = 1. 592

Therefore, 1.3592 kilometers is the distance that Joyce needs to walk.



What's More

Find the value of **N**. Arrange the decimals vertically and perform the indicated operation. Write your answers on your answer sheet.

Example: 345.6789 – 231.5702 = N

Solution:

$$\begin{array}{r} 345.6789 \\ -\ 231.5702 \\ \hline 114.1087 \end{array}$$

1) 32.569 – 21.231 = N

2) 5.0971 – 3.0450 = N

3) 86.789 – 2.56 = N

4) 23.9062 – 13.8061 = N

5) 132.9998 – 10.5390 = N

What I Have Learned

When two decimals are subtracted,

- align the decimal points in a straight column.
- use 0 as placeholder if needed.
- subtract just like subtracting whole numbers.
- place a decimal point in the difference.
- align the decimal point in the difference with the decimal points in the minuend and subtrahend.

What I Can Do

A. Find the value of **N**. Write your answers on your answer sheet.

1) 28.8967 – 13.7601 = N

2) 97.8949 – 25.0320 = N

3) 56.3929 – 31.3008 = N

4) What is the difference if 2.3160 subtracted from 6.5165?

5) If 63.9813 subtracted from 93.9986, what is the difference?

B. Read and solve. Show your solutions on your answer sheet.

6) Geovy Marielle savings account balance earned ₱253.41 interest and her balance now is ₱8 998.76. How much was the balance in her savings account before she earned the interest?
7) If you add 34.2576 to the difference of 75.6974 and 34.6671, what will be the result?

Assessment

Find the value of **N**. Write in column and subtract. Write your answers on your answer sheet.

1) 56.9830 – 23.450 = N

2) 45.7834 – 44.7822 = N

3) 6 790.6397 – 450.5246 = N

4) 37.9076 – 4.8060 = N

5) 147.8206 – 23.6004 = N

6) 329.4598 – 210.2321 = N

7) 131.0637 – 30.0527 = N

8) 349.3281 – 221.1140 = N

9) 0.9821 – 0.7820 = N

10) 459.0957 – 213.0931 = N

Additional Activities

A. Find the value of **N**. Write your answers on your answer sheet.

1) 42.8986 – 2.3783 = N

2) 65.9341 – 22.9231 = N

3) 562.9120 – 430.6010 = N

4) 72.1274 – 12.0021 = N

5) 1 432.5228 – 21.422 = N

B. Solve the following problems. Show your solution on your answer sheet.

6) Mang Jose needs ₱8 569.98 to buy plane tickets for a family vacation in Manila. He has saved ₱4 318.75 for the plane ticket. How much more does he need for the plane ticket?
7) The highest temperature yesterday was 19.99°C? The lowest temperature was 14.66°C. Find the difference between these two temperatures.
8) Flor a fruit vendor buys 56.205 kilograms of mangoes to increase her stocks. She has now a total stock of 97.6081 kilograms of mangoes. How many kilograms are there on her stocks before adding her new stocks?
9) The narra tree is 25.789 meters tall. The mango tree is 3.362 meters shorter than the narra tree. How tall is the mango tree?
10) Portia deposits ₱234.85 in her savings account. She has now a total of ₱1,479.97 in her account. How much was her account before the deposit?

Answer Key

What I Know

1) 21 . 3520
2) 34 . 1023
3) 111 . 5610
4) 4 001 . 1742
5) 11 . 0191
6) 10 . 1028
7) 55 . 0909
8) 49 . 7302
9) 331 . 1101
10) 34 . 01

What's In

1) 0 . 433
2) 0 . 219
3) 3 . 158
4) 178 . 63

What's More

1) 11 . 338
2) 2 . 0521
3) 84 . 229
4) 10 . 1001
5) 122 . 4608

What I Can Do

A.

1) 15 . 1366
2) 72 . 8629
3) 25 . 0921
4) 4 . 2005
5) 30 . 0173

B.

6) ₱8 745.35
7) 75.2879

Assessment

1) 33 . 533
2) 1 . 0012
3) 6 340 . 1151
4) 33 . 1016
5) 124 . 2202
6) 119 . 2277
7) 101 . 011
8) 128 . 2141
9) 0 . 2001
10) 246 . 0026

Additional Activities

A.

1) 40 . 5203
2) 43 . 011
3) 132 . 311
4) 60 . 1253
5) 1 411 . 1008

B.

6) ₱4 251 . 23
7) 5.33°C
8) 41.4031 kg
9) 22.427 m
10) ₱1 245.12

What I Know

Find the value of **N**. Write in column and subtract. Regroup if necessary. Write your answers on your answer sheet.

Example: 79.3216 – 16.0107 = N
Solution:

$$\begin{array}{r} {}^{0}{}_{1}{}^{1} \\ 79.3216 \\ -\ 16.0107 \\ \hline 63.3109 \end{array}$$

1) 96.8902 – 23.7810 = N

2) 390.1289 – 210.3860 = N

3) 9.2896 – 8.1159 = N

4) 56.9012 – 29.8901 = N

5) 99.0391 – 48.12 = N

6) 321.4041 – 316.3029 = N

7) 689.092 – 345.191 = N

8) 639.7901 – 308.680 = N

9) 22.8012 – 13.0092 = N

10) 3 890.23 – 26.2369 = N

Lesson 2 Subtracting Decimals and Mixed Decimals through Ten Thousandths With Regrouping

This lesson will help you understand the skills in subtracting decimals and mixed decimals through ten thousandths with regrouping.

What's In

"Climb the Ladder"
Find the value of **n** by getting the difference of the given numbers. Write your answers on your answer sheet.

Congratulations!

5) 17.395 – 9.267 = n

4) 90.475 – 0.383 = n

3) 22.750 – 0.249 = n

2) 109.868 – 1.094 = n

1) 26.793 – 0.026 = n

What's New

Read and understand the problem.

Jacob went to the department store to buy a pair of shoes. He bought a pair of shoes for ₱245.78. He gave the cashier the amount of ₱250.00. How much change did he receive?

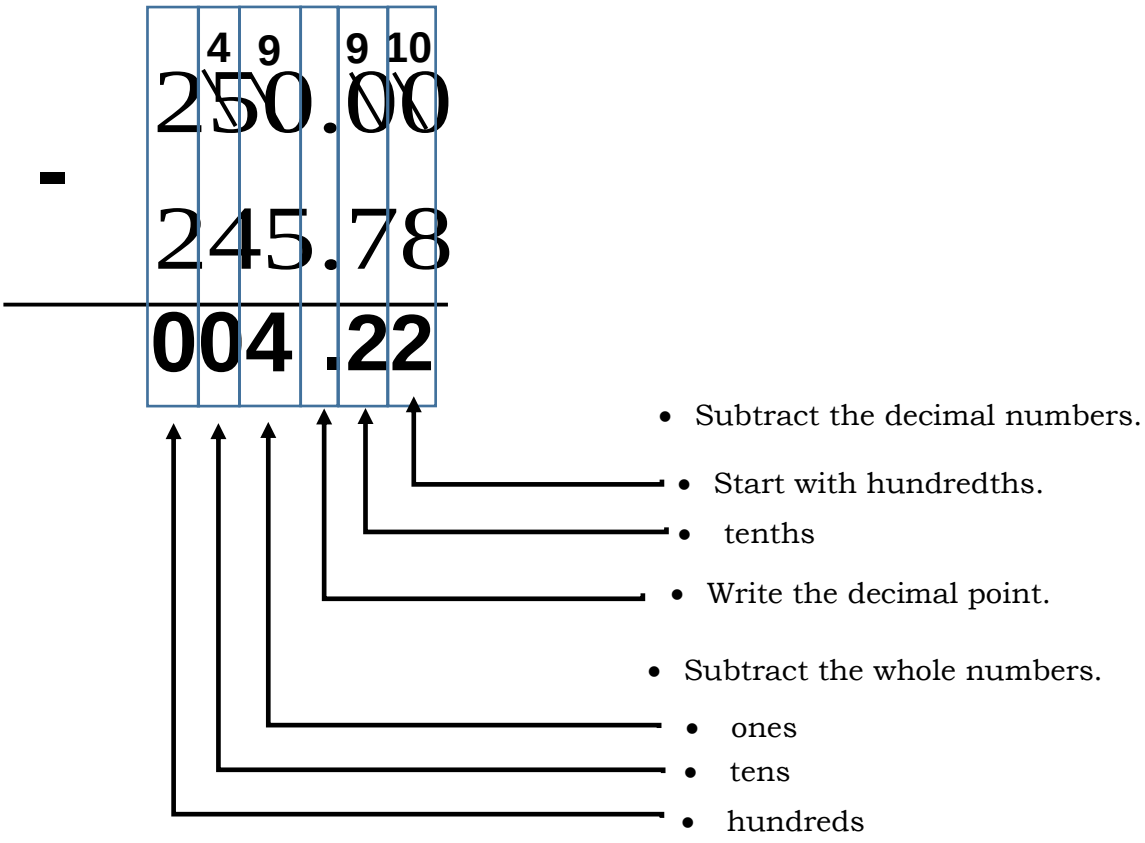
What is It

What information is given in the problem? How are you going to solve for it?
Here are the steps to solve it.

- Write and arrange the numbers vertically. Align the decimal points. Fill in the empty spaces with zero.

$$\begin{array}{r} 250.00 \\ -\ 245.78 \\ \hline \end{array}$$

- Subtract from right to left, column by column. Regroup if necessary.



So, ₱250.00 – ₱245.78 = ₱4.22.

Therefore, Jacob's change is ₱4.22.

Now that you are already familiar with the steps on how to subtract decimals without or with regrouping, you can move on studying the problem below.

Example 1:

> Mrs. Aligado has ₱2 457.95 in her purse. Her daughter asked her to buy their food supply and she spent ₱1 236.05. How much money had she left?

To solve the problem above, follow these steps:

Understand:

a. What is asked?

Answer: The amount of money that is left.

b. What are the given facts?

Answer: ₱2 457.95 - the money in her purse

₱1 236.05 - the money spent for the food supply

Plan:

a. What is the operation to be used?

Answer: subtraction

b. What is the number sentence?

Answer: ₱2 457.95 – ₱1 236.05 = N

Solve:

Show your computation:

Subtract ₱2 457.95 – ₱1 236.05 = N

1. Line up the decimal points

$$\begin{array}{r} 2457.95 \\ -\ 1236.05 \\ \hline \end{array}$$

2. Subtract the numbers. Regroup if needed.

$$\begin{array}{r} 2457.95 \\ -\ 1236.05 \\ \hline \mathbf{1221.90} \end{array}$$

Answer: ₱1 221.90 is the amount of money left with Mrs. Aligado.

Check:

Check your answer. This is one way on how to check if the answer is correct.

$$\begin{array}{rll} 1236.05 & \longleftarrow & \text{the money spent for food supply} \\ +\ 1221.90 & \longleftarrow & \text{the money left with Mrs. Aligado} \\ \hline \mathbf{2457.95} & \longleftarrow & \text{the money inside her purse} \end{array}$$

Example 2:

The cost of apples and grapes is ₱235.50. The grapes cost ₱93.50 more than the apples. Find the cost of the grapes.

To solve the problem above, follow these steps:

Understand:

a. What is asked?

Answer: The cost of the grapes

b. What are the given facts?

Answer: ₱235.50 - the cost of apples and grapes

₱93.50 - the cost of grapes more than the apples

Plan:

a. What is the word/phrase clue?

Answer: cost of the grapes

c. What is the operation to be used?

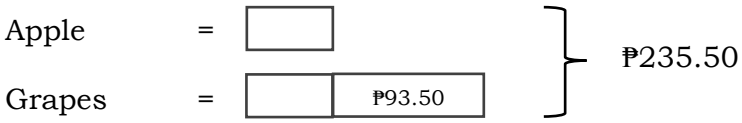
Answer: subtraction, division and addition

d. What strategy you are going to use?

Answer: Block Model Strategy

Solve:

To find for the cost of the grapes you will solve the problem by using the block model strategy.



In the illustration above, the total cost of two equal units and the other bigger unit which is P93.50 is P235.50.

2 of ☐ + ☐ ₱93.50 = ₱235.50

Notice that out of 3 units, the bigger unit is ₱93.50 while the other 2 equal units don't have value yet. That's what you will solve for.

To solve for the 2 equal units, you need to take away ₱93.50 from ₱235.50.

2 of ☐ = ₱235.50 – ₱93.50

2 of ☐ = ₱142.00

Then, for the value of 1 unit, you need to divide P142.00 by 2.

1 ☐ = ₱142.00 ÷ 2

1 ☐ = ₱71.00

So, you can say now that each unknown or equal unit is ₱71.00.

This time you place value to each block and solve for the cost of each fruit.

To get the cost of each fruits, you need to substitute the value of each unit. For the apples, it is understood that 1 unit is equal to ₱71.00. For the

grapes, add the value of the smaller unit which is ₱71.00 to the bigger unit which is ₱93.50.

Apples	₱71.00	= ₱71.00
Grapes	₱71.00 ₱93.50	= ₱164.50

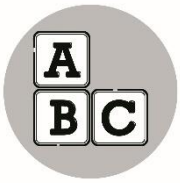
Therefore, the cost of grapes is ₱164.50.

Check: This is one way on how to check if the answer is correct.

+	₱164.50	Cost of the grapes
	₱ 71.00	Cost of apples
	₱235.50	Total cost of apples and grapes

-	₱164.50	Cost of the grapes
	₱ 71.00	Cost of apples
	₱93.50	

Therefore, the cost of grapes is ₱93.50 more than the cost of apples.



What's More

Arrange the decimals vertically and subtract the following mixed decimals. Write your answers on your answer sheet.
Example: 397.6819 – 242.2348 = N

Solution:

$$\begin{array}{r} 397.6\overset{7}{\cancel{8}}19 \\ -\ 242.2348 \\ \hline 155.4471 \end{array}$$

1) 34.9849 – 0.5923 = N

2) 76.9078 – 65.4079 = N

3) 139.9619 – 36.2835 = N

4) 114.983 – 23.8646 = N

5) Jessie has 8.5 kilograms of fish more than Shiela. They have 39.5 kilograms of fish altogether. Find the weight of fish Jessie has.

What I Have Learned

When two decimals are subtracted,

- align the decimal points in a straight column.
- use 0 as placeholder if needed.
- subtract just like subtracting whole numbers. Regroup if necessary.
- place a decimal point in the difference.
- align the decimal point in the difference with the decimal points in the minuend and subtrahend.

What I Can Do

A. Subtract the following mixed decimals. Write your answers on your answer sheet.

1) 89.8996 – 43.9697 = N

2) 28.5692 – 17.4980 = N

3) 96.8405 – 90.6914 = N

4) Subtract 2.523 from 5.094.

5) What is 34.9639 decreased by 21.8991?

B. Read and solve the problems. Write your answers on your answer sheet.

6) Marvie saved ₱1 755.45 from her earnings from selling calamansi juice each month. On the first month, she saved ₱585.45. On the second month, she saved ₱195.45 less than the first month. And on the third month she saved twice as much as the second month. How much money did she save in the second month? And on the third month?

7) A working table is 5.3854 feet long. It is to be extended just a little to 8.0732 feet. How long does it extend?

Assessment

Find the value of **N**. Write in column and subtract. Write your answers on your answer sheet.

1) 98.30 – 23.9045 = N
2) 7.8354 – 4.7822 = N
3) 970.6937 – 450.5246 = N
4) 67.6709 – 29.8915 = N
5) 127.2866 – 23.6974 = N
6) 674.9145 – 219.2328 = N
7) 182.6032 – 109.0527 = N
8) 493.8321 – 227.1140 = N
9) 45.9021 – 20.7829 = N
10) Zyah, Kara and Shaina have ₱457.75 together. Kara has ₱15.25 more than Zyah, and Shaina has twice as much money as Kara. How much money does each of them have?

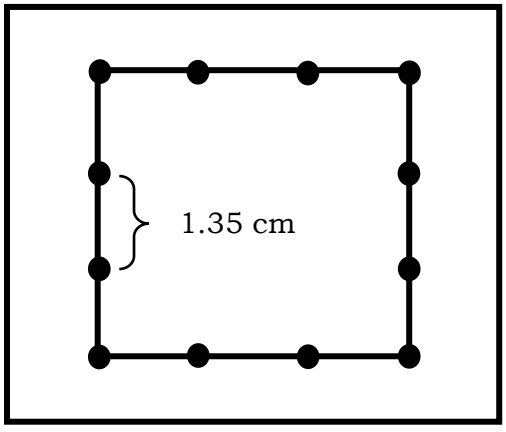
Additional Activities

A. Subtract the following mixed decimals. Write your answers on your answer sheet.

1) 52.8982 – 22.3783 = N
2) 56.4391 – 33.9831 = N
3) 1 562.8340 – 40.6719 = N
4) 291.2304 – 82.0921 = N
5) 2.5268 – 1.432 = N

B. Solve the following problems. Write your answers on your answer sheet.

6) Lalyn has ₱550.75 but she owes Collin ₱1100.55. She received a certain amount as gift. After paying her debt, she had ₱1 200.00 left. How much did she receive?
7) A pail holds 7.23 liters of water. A water container holds 4.96 liters less water than the pail. What is the volume of water in the water container?
8) You are craving for mango float. Your recipe needs 3.5 kilograms of mangoes. If you have 1.783 kilograms of mangoes, how many more kilograms do you need?
9) The textile store had to restock their supply of materials. The store owner ordered 320.25 meters of new materials which were delivered on Saturday. On Monday, they sold 35.473 meters of the new stock. On Tuesday, they sold 44.599 meters, and on Wednesday 63.756 meters. How many meters of materials were left for the next day/s?
10) The distance between two consecutive nails in the inner and outer square frames is 1.35cm. Alice used 20 equidistant nails around the bigger frame. What is the difference in the perimeter of the outer frame and the inner frame? (Figures are not drawn to scale.)



Answer Key

What I Know

1) 73.1092
2) 179 .7429
3) 1.1737
4) 27.0111
5) 50.9191
6) 5.1012
7) 343.901
8) 331.1101
9) 9.792
10) 3 863.9931

What's In

1) 26.767
2) 108.774
3) 22.501
4) 90.092
5) 8.128

What's More

1) 34.3926
2) 11.4999
3) 103.6784
4) 91.1184
5) 24 kilograms

What I Can Do

A.

1) 45.9299
2) 11.0712
3) 6.1491
4) 2.571
5) 13.0648

B.

6) 2nd month-₱390.00
3rd month-₱780.00
7) 2.6878feet

Assessment

1) 74.3955
2) 3.0532
3) 520.1691
4) 37.7794
5) 103.5892
6) 455.6817
7) 73.5505
8) 266.7181
9) 25.1192
10) Zyah-P103.00
Karah-P118.25
Shaina-P236.50

Additional Activities

A.

1) 30.5199
2) 22.456
3) 1 522.1621
4) 209.1383
5) 1.0948

B.

6) ₱1 749.80
7) 2.27 liters
8) 1.717 kilograms
9) 176.422 meters
10) 10.8 cm

Reference:

- Most Essential Learning Competencies (MELC) in Mathematics 6

For inquiries or feedback, please write or call:

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