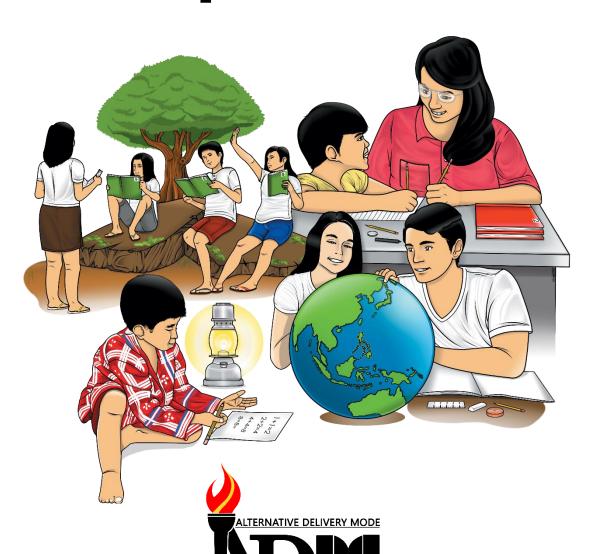


Mathematics

Quarter 1 – Module 8: Division of Whole Numbers By Decimals Up To 2 Decimal Places



GOVERNMENT PROPERTY NOT FOR SALE Mathematics – Grade 6 Alternative Delivery Mode

Quarter 1 - Module 8: Division of Whole Numbers By Decimals Up To 2 Decimal

Places

First Edition, 2020

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Mathematics

Quarter 1 – Module 8: Division of Whole Numbers By Decimals Up To 2 Decimal Places



Introductory Message

For the facilitator:

Welcome to the Mathematics 6 Alternative Delivery Mode (ADM) Module on Division of Whole Numbers By Decimals Up To 2 Decimal Places!

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 Division of Whole Numbers By Decimals Up To 2 Decimal Places!

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:

1		
(Gi)
1		

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.



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!



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

The module is divided into three lessons, namely:

- Lesson 1 Dividing Whole Numbers by Decimals Up to 1 Decimal Place
- Lesson 2 Dividing 1 Decimal Place by Whole Numbers
- Lesson 3 Dividing Whole Numbers by Decimals Up to 2 Decimal Places

After going through this module, you are expected to:

- 1. divide whole numbers by decimals up to 1 decimal place; (M6NS-Ig-116.3)
- 2. divide 1 decimal place by whole numbers; (M6NS-Ig-116.3)
- 3. divide whole numbers by decimals up to 2 decimal places; **(M6NS-Ig-116.3)** and
- 4. solve routine and non-routine problems involving division of whole numbers by decimals up to 2 decimal places including money using appropriate problem-solving strategies and tools. (M6NS-Ii-120.2)



What I Know

Find the quotient. Write your answer on your answer sheet.

Lesson 1

Dividing Whole Numbers by Decimals Up to 1 Decimal Place

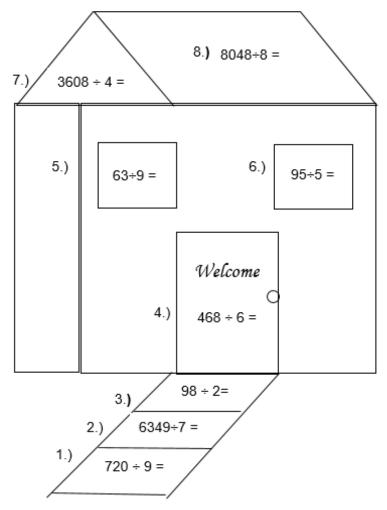
How did you find your journey on multiplying decimals? Was it an exciting experience? This time, you will continue your trip, a trip where you will enjoy exploring with the next operation that is division of decimals.



What's In

PLEASE COME IN

Answer each division equation in order for you to enter the house. Do your solutions on your answer sheet.





Read the problem below.

Aling Irma sews pillowcases. She uses 0.7 meter of cotton cloth for every pillowcase she makes. How many pillowcases can she make out of 21 m of cotton cloth?



What is It

Study the following:

Step 1: Multiply the divisor by a power of 10 or simply move the decimal point to the right to make it a whole number.

divisor
$$\longrightarrow$$
 0.7 \bigcirc 21 \longrightarrow dividend

Step 2: Do the same with the dividend. Place the decimal point directly above the decimal point of the dividend.

Step 3: Divide just like dividing whole numbers.

Based on the solution, Aling Irma can make 30 pillowcases out of 21 meters of cotton cloth.



What's More

I'll provide you with another example before you start your task. Study it carefully. Question: How many 0.5 are there in 915?

This is how you go about it... $915 \div 0.5 = ?$

Now, it's your turn to solve.

Find the quotient. Write your solution on your answer sheet.



What I Have Learned

> In dividing whole numbers by decimals up to 1 decimal place:

- 1. multiply the divisor by a power of 10 or simply move the decimal point to the right to make it a whole number;
- 2. do the same with the dividend. Place the decimal point directly above the decimal point of the dividend; and
- 3. divide just like dividing whole numbers.



What I Can Do

A. Complete the table by dividing. Do it on your answer sheet.

No.	Dividend	Divisor	Quotient
1	9 018	0.9	
2	497	0.7	
3	620	0.5	
4	5 624	0.8	
5	1 266	0.6	

- B. Solve the following problems on your answer sheet. Label your answers.
 - 6.) A string measures 27 meters. How many pieces of 0.9 meter string can Virgilio make from it?
 - 7.) Marilou bought 12 kilograms of tomatoes in the market. She packed these tomatoes into plastic bags of 0.5 kilogram per pack. How many packs can she make?



Assessment

Find the quotient. Write your answers on your answer sheet.

1.)
$$0.5)475$$

6.)
$$0.3)4536$$

7.)
$$0.7)84$$

3.)
$$0.3)42$$

8.)
$$0.5)9425$$

4.)
$$0.6)54$$

9.)
$$0.8)7256$$

5.)
$$0.8)6488$$

10.)
$$0.9\overline{)450}$$



Additional Activities

A. Divide the following. Write your answers on your answer sheet.

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

- 6.) A roll of ribbon is 120-meter long. If it will be cut equally into pieces of 0.8 meter, how many pieces will be made?
- 7.) Mr. Dormis drove 63 kilometers in one hour. How many 0.3-kilometer distance did he drive in an hour?
- 8.) On a camping, the boy scouts were requested to bring bamboo poles. Troop Masigasig brought a pole measuring 8 meters. If they will divide it equally into pieces of 0.2 meter, how many pieces will they get?
- 9.) A private plane travels 28 miles per hour. How many 0.4 mile does it travel with the said speed?
- 10.) A drum contains 324 liters of liquid fertilizer. Mang Kanor wanted to divide it into smaller containers containing 0.6 liter each. How many containers does he need?

Answer Key

Additional Activities A. 1. 830 2. 39 020 4. 10 090 5. 9 020 B. 6. 150 pieces of ribbons 7. 210 – 0.3 km distance 8. 40 pieces of bamboos 9. 70 – 0.4 mile were travelled in one hour 10. 540 containers	1. 10 020 2. 710 3. 1 240 4. 7 030 5. 2 110 8. 30 pieces of 0.9- meter string 7. 24 packs of tomatoes	08 .1 09 .2 09 .2 07 .5 87 .4 6. 19 7 .5 7 .0 7 .0 7 .90 7 .90 8. 1 006
10. 500	.A	10. 910
040 6 '6	0.5 1 1170 27114	060 8 6
8. 18 850	What Can I Do	8, 9100
7. 120 6. 15120		02 7 2 . 9 7. 80
6. 15 120 6. 15 120	2. 11 <i>4</i> 10	9. 900
06 .4	098 .4	4. 30
3. 140	3, 4 030	3. 26
2. 70	2. 420	2. 810
1. 950	1. 320	۱. ۲۵
Assessment	What's More	What I Know



What I Know

Find the quotient. Write your solution on your answer sheet.

1.) 4)0.8

6.) 2)0.6

2.) 6)0.3

7.) 45)0.9

3.) 25)0.5

8.) 40)0.4

4.) $12\overline{)0.6}$

9.) 5)0.4

5.) 35)0.7

10.) 25)0.6

Lesson

2

Dividing 1 Decimal Place by Whole Numbers

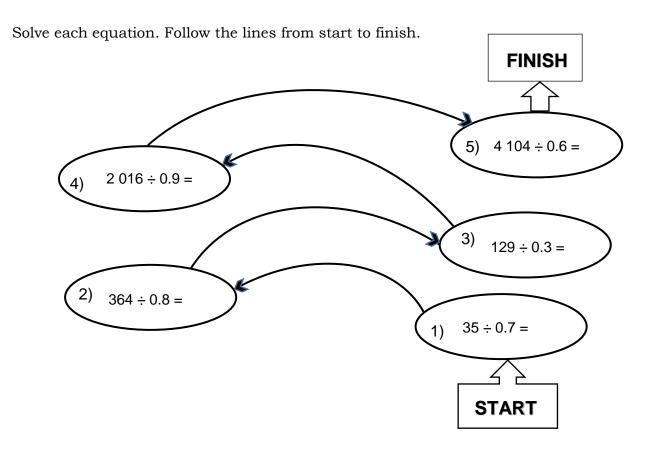
You already have the first grasp of the lesson on division involving decimals which is dividing whole numbers by decimals. Moving on to the next level will be more challenging. Now, you will be dividing 1 decimal place by whole numbers.



What's In

Try to have a good start by completing the activity below.

DECIMAL MAZE





Are you spending your time wisely?

Try to read and analyze the problem below.

Sandra has 0.8 of an hour to spend for two activities: reviewing her English lessons and making her Math assignment. How much time will be spent for each activity?



What is It

Now, let us solve the problem step by step.

Step 1: Write the equation.

divisor
$$\rightarrow$$
 2 $0.8 \leftarrow$ dividend

Step 2: Write the decimal point directly on top of the decimal point of the multiplicand.

Step 3: Divide just like dividing whole numbers.

Therefore, Sandra will be spending 0.4 hour for each activity.

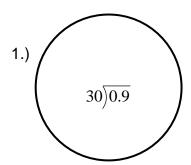


What's More

I'll show you another example on how to divide 1 decimal place by a whole number. Analyze it carefully.

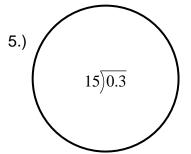
Given: 0.7 ÷ 5 =?

Solve each of the following equation. Write your solutions on your answer sheet.



3.)
$$0.8 \div 5 =$$

4.)
$$0.6 \div 30 =$$





What I Have Learned

Remember:

- > To divide one decimal place by whole numbers, simply:
 - 1. align the decimal point directly on top of the decimal point in the dividend. You may add zeroes, if needed; and
 - 2. divide as in dividing whole numbers.



What I Can Do

A. Find the quotient. Write your solution on your answer sheet.

- B. Read, analyze, and solve. Label your answers.
 - 6.) If 0.5 meter will be divided by 40, what is the quotient?
 - 7.) Lanie has 0.6 of an hour in doing 3 household chores: sweeping the yard, washing the dishes, and doing the laundry. How much time will be spent for each task?



Assessment

Divide each given equation correctly. Write your answers on your answer sheet.

1.)
$$40)0.8$$

6.)
$$20\overline{)0.9}$$

2.)
$$24)0.6$$

7.)
$$30)0.6$$

3.)
$$5)0.3$$

8.)
$$35)0.7$$

4.)
$$50)0.8$$

9.)
$$5)0.1$$

5.)
$$10)0.5$$

10.)
$$5)0.9$$



Additional Activities

A. Find the quotient. Write your answers on your answer sheet.

B. Read, solve, and label your answer. Write your solutions on your answer sheet.

6.) The children had 0.5 mango pizza left for snacks. If this will be sliced equally into 5, how big is one slice?

- 7.) Mang Andres owns 0.8 hectare of land. He plans to divide it among his 4 children. What part of his land will each child get?
- 8.) Renela has 0.6 liter of disinfectant liquid to be used in preparing solution for three footbaths of the same size. How much disinfectant liquid will be used in each footbath?
- 9.) Mother bought 0.4 kilogram of grapes for her 2 kids? How many kilogram of grapes will each kid receive?
- 10.) Shanie is a private tutor. She has 0.9 of the day to spend for her three tutees. What part of the day will be spent for each tutee?



Answer Key

Additional Activities A. 0.02 2. 0.05 3. 0.025 4. 0.0125 6. 0.1 – part of 1 slice of mango pizza 7. 0.2 hectare – part of land get land each child get land each for land each for land each for land each for land each lan	1. 0.05 2. 0.02 3. 0.06 4. 0.035 5. 0.05 B. 6. 0.0125 meter 7. 0.2 hour – will be spent for each task	######################################
20.0 .1 20.0 .2 2. 0.025 3. 0.06 6. 0.016 5. 0.045 7. 0.02 8. 0.02 9. 0.02 10, 0.18	1. 0.03 2. 0.05 3. 0.16 4. 0.02 5. 0.02 5. 0.02 Mhat I Can Do	2.0 .1 20.0 .2 20.0 .2 20.0 .5 30.0 .4 20.0 .5 5.0 .0 7 80.0 .0 80.0 .0
Assessment	What's More	What I Know



What I Know

A. Find the quotient. Write your answers on your answer sheet.

1.)
$$0.07\overline{)35}$$

3.)
$$0.60\overline{)540}$$

4.)
$$0.44)88$$

B. Divide the following decimals. Write your answers on your answer sheet.

Lesson

3

Dividing Whole Numbers by Decimals Up to 2 Decimal Places

How do you feel now after taking two lessons? Still feeling great, I guess. It's really admirable to note that you are at ease with the previous challenges and still eager to climb up the higher level.



What's In

Divide the given decimals. Choose the letter of the correct answer and write it on your answer sheet.

1.)	0.9 ÷ 3 =			
	A. 0.3	B. 0.03	C. 0.003	D. 0.0003
2.)	0.8 ÷ 16 =			
	A. 0.0005	B. 0.005	C. 0.05	D. 0.5
3,)	0.8 ÷ 25			
	A. 0.031	B. 0.032	C. 0.033	D. 0.034
4.)	0.6 ÷ 15 =			
	A. 0.01	B. 0.02	C. 0.03	D. 0.04
5.)	0.7 ÷ 35 =			
	A. 2	B. 0.2	C. 0.02	D. 0.002



Study and analyze the problem below.

Mrs. Gomez received a box of canned goods weighing 112 kilograms. She plans to place these into smaller boxes weighing 0.16 kilogram each. How many boxes does she need?



What is It

To find out the number of boxes needed, do the following steps:

Step 1: Write the equation based on the problem.

$$\mathbf{divisor} \longrightarrow 0.16) \quad 112 \longleftarrow \mathbf{dividend}$$

Step 2: Multiply the divisor by a power of 10 or simply move the decimal point to the right. (0.16 now becomes 16)

Step 3: Do the same with the dividend. Since the dividend is a whole number, you will add two zeroes. (112 now becomes 11 200)

Step 4: Divide as in dividing whole numbers.

So, Mrs. Gomez needs 700 small boxes to materialize her plan.

For you to further learn the skill of dividing whole numbers by decimals up to 2 decimal places, study the problem below.

Rose bought four rulers and some markers that cost ₱154.50. If one ruler costs ₱11.25 while one marker costs P36.50, how many markers did she buy?

Understand:

1. What is asked?

Answer: The number of markers Rose bought

2. What facts are given?

Answer: ₱154.50 – total cost of four rulers and some markers

₱11.25 – cost of one ruler

₱36.50 – cost of one marker

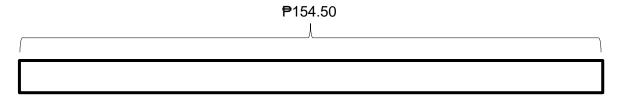
Plan: What operations will you use to solve the problem? Decide for a strategy.

Strategy: The Block Model Strategy will help you solve this problem.

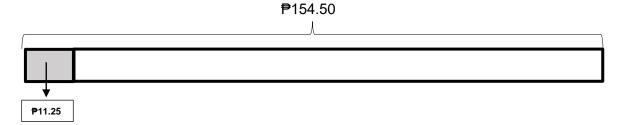
Solve: Show your solution.

Applying the strategy:

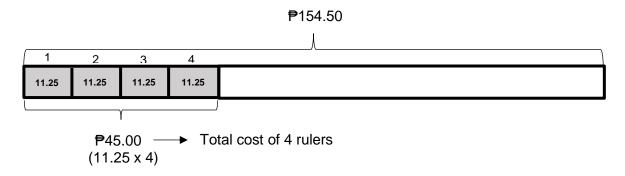
Step 1: Draw a block model to represent the total cost of the rulers and markers.



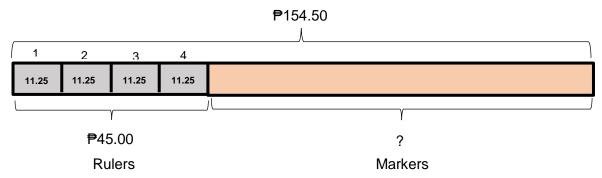
Step 2: Cut a portion to represent the price of 1 ruler.



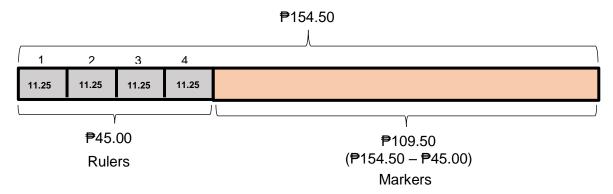
Step 3: Cut portions representing the price of all the 4 rulers. (₱11.25 x 4 = ₱45.00)



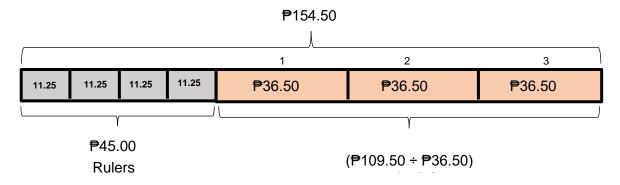
Step 4: The remaining part of the block model represents the cost of the markers.



Step 5: Subtract the total cost of the rulers from the total cost of the rulers and markers.



Step 6: Divide ₱109.50 by ₱36.50 which is the unit price of one marker to get the number of markers Rose bought.



So, Rose bought three markers.

Check: To check the answer, multiply the cost of one ruler which is ₱11.25 to 4. Multiply also the cost of one marker which is ₱36.50 to 3. Then, add the total cost of the rulers and total cost of the markers. If it is equal to ₱154.50, thus, your answer is correct.

₱11.25 x 4 = ₱45.00
$$\longrightarrow$$
 total cost of 4 rulers

₱45.00 + ₱109.50 = ₱154.50 → total cost of 4 rulers and 3 markers

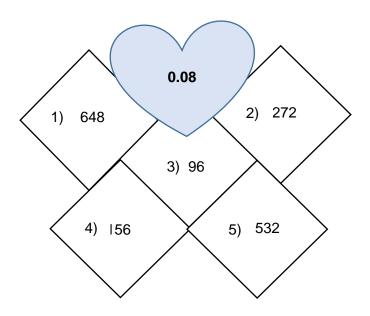


What's More

I'll give you another example to serve as your guide before answering the next exercise.

0

A. Divide the whole numbers inside the rhombuses by the decimal number inside the heart. Write your solution on your answer sheet.



B. Read and solve. Use the appropriate strategy. Show your solution on your answer sheet.

Two raincoats and four umbrellas cost ₱861.50. If one umbrella costs ₱90.25, how much does one raincoat cost?



What I Have Learned

How do you divide whole numbers by decimals up to 2 places?

> To divide whole numbers by decimals up to 2 decimal places:

- 1. multiply the divisor with a power of ten or move the decimal point to the right to make it a whole number;
- 2. move also the decimal places in the dividend as many places you move in the divisor. Add zeroes as placeholders, if needed; and
- 3. divide as in dividing whole numbers.



What I Can Do

A. Find the value of N. Write your solutions in your answer sheet.

- 1.) $48 \div 0.06 = N$
- 2.) $72 \div 0.24 = N$
- 3.) $200 \div 0.08 = N$
- 4.) $63 \div 0.07 = N$
- 5.) $165 \div 0.11 = N$

Read, analyze, and solve. Label your answers.

- 6.) Twinkle received a ₱100-peso bill from her ninang. She went to the bank to exchange the amount for ₱0.25. How many pieces of 25 centavos will the teller give her?
- 7.) Dianne bought six blouses and five skirts at ₱1 066.00. If one blouse costs ₱105.25, how much is the cost of one skirt?
- 8.) What is halfway between 20 and 33.74?



Assessment

A. Solve the following division equations on your answer sheet.

1.)
$$0.23\overline{)69}$$

6.)
$$0.18\overline{)540}$$

2.)
$$0.21)84$$

3.)
$$0.08)720$$

8.)
$$0.40)240$$

9.)
$$0.17)85$$

5.)
$$0.09\overline{)108}$$

10.)
$$0.33\overline{)165}$$

B. Read and solve. Use the appropriate strategy. Show your solution on your answer sheet.

Rico went to a bookstore. He bought six pieces of Mathematics pocket dictionaries and eight pieces of English-Filipino dictionaries which cost ₱680.60. If one piece of Mathematics pocket dictionary costs ₱45.50, how much does one piece of English-Filipino dictionary cost?



Additional Activities

A. Find the quotient. Write your solutions on your answer sheet.

B. Read, analyze, and solve. Write the solutions on your answer sheet.

- 6.) In a quiz bee, the contestants were asked to find out if how many ₱0.75 cents are there in ₱375. What will the answer be?
- 7.) The officials of Barangay Constancia plan to plant mango seedlings along the six-kilometer highway. The distance between two consecutive seedlings is 0.24 kilometer. How many mango seedlings do they need to plant from end to end of the highway?
- 8.) A box contains 15 kilograms of iodized salt. How many packs of 0.25-kilogram iodized salt can be made from it?
- 9.) Alice is a fruit vendor. In her fruit stand, 10 Indian mangoes and 15 guavas are sold at a total cost of ₱278.75. If one Indian mango costs ₱9.50, how much does one guava cost?
- 10.) What is three-fourths way between 12.65 and 15?

Answer Key

1. 300 2. 400 3. 9 000 4. 21 800 5. 1 200 6. 3 000 7. 1 100 8. 600 9. 500 1. 8 700 2. 400 2. 400 3. 3 100 4. 9 100 2. 400 3. 3 100 4. 9 100 6. 500 8. 60 packs 9. 60 packs 9. 60 packs 9. 60 packs 10. 14.4125 - \$4 way	1. 8 100 2. 3 400 3. 1 200 4. 1 950 4. 1 950 B.	1. 500 2. 300 3. 900 4. D0 5. 10 200 8. 3 000 9. 400 10. 700 10. 700
Assessment A.	What's More A.	What I Know

Reference:

 $\bullet \quad \textit{Most Essential Learning Competencies (MELC) in Mathematics } 6 \\$

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