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Mathematics

Quarter 2 – Module 12: Dividing Whole Numbers with Quotients in Decimal Form

ALTERNATIVE DELIVERY MODE

ADM

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Quarter 2 – Module 12: Dividing Whole Numbers with Quotients in Decimal Form
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Quarter 2 – Module 12:

Dividing Whole Numbers with Quotients in Decimal Form

DepED
DEPARTMENT OF EDUCATION

Introductory Message

This Self-Learning Module (SLM) is prepared so that you 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.

Pretests are provided to measure your prior knowledge on lessons in each SLM. These 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 posttest 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, the **Notes to the Teacher** is 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

Good day, mathletes!

This module was designed to help you gain understanding and test your ability in dividing whole numbers with quotients in decimal form. Learning to divide whole numbers with quotients in decimal form is just as important as any other lessons you have already taken from the previous modules for these can be of use in our everyday life situations.

After going through this module, you are expected to divide whole numbers with quotients in decimal form.

What I Know

Directions: Do what is asked. Write the letter of the correct answer on a separate answer sheet.

1.) Find the value of T in 5 ÷ 10 = T.
   A. 0.20   B. 0.5   C. 20   D. 50

2.) Find the quotient of 30 ÷ 50.
   A. 0.6   B. 1.6   C. 1.8   D. 2.3

3.) The answer in dividing 20 by 50 is ___?
   A. 0.20   B. 0.4   C. 0.65   D. 4.1

4.) If the divisor is 40 and the dividend is 30, the quotient is ___?
   A. 0.75   B. 0.85   C. 7.9   D. 8.3

5.) Solve for X in the expression 20 ÷ 40 = X.
   A. 0.25   B. 0.5   C. 0.60   D. 3.3

6.) To divide whole numbers with decimal quotients, what number do we add in the tenths place of the dividend?
   A. 0   B. 2   C. 4   D. 6

7.) When dividing whole numbers with decimal quotients, in what place do we add the initial zero in the dividend?
   A. ones   B. tenths   C. hundredths   D. thousandths

8.) If the given expression is $10 \div 25 =$, where do we place the decimal point in the dividend?
A. before 1   B. before 2   C. after 0   D. after 5

9.) Zeros are continually added in the dividend until the difference. is equal to what number?
A. 0   B. 1   C. 3   D. 5

10.) To check if the quotient is correct, we multiply it by what number?
A. decimal   B. dividend   C. divisor   D. number

Lesson 1 — Dividing Whole Numbers with Quotients in Decimal Form

In order, to divide whole numbers with decimal quotients, you need to master the skills on place value and on dividing decimals having 1 decimal place and with up to 2 decimal places. Your acquired knowledge in basic multiplication and division is of big help as well in completing this module. All of these and other prerequisites will help you gain understanding the concept of the lesson. Let's get started.

What's In

In the previous module, you have learned how to **Divide Decimals with up to 2 Decimal Places.** Let's check if you can still recall.

In dividing decimals with up to 2 decimal places, the following steps are to be considered:

➤ 1. Multiply the divisor by 100 to make it a whole number.

➤ 2. Multiply the dividend also by 100.

➤ 3. Divide. Continue dividing until the difference is equal to zero.

➤ 4. Check: Multiply the quotient and the divisor, the product must be equal to the dividend.

Note that if the divisor has only 1 decimal place, we follow these steps:

> ➢ 1. Multiply both the dividend and the divisor by 10.
> ➢ 2. Then we divide just like dividing whole numbers.
> ➢ 3. Put the decimal point in the answer directly above where the dividend's decimal point is placed after it was multiplied by 10.
> ➢ 4. Check, multiply the quotient, and the divisor were the product must be equal to the dividend.

Applying the steps:

Find the quotient of the following. Number 1 is done for you.

1) $1.75 \div 0.35 =$ 2) $18.75 \div 0.50 =$ 3) $2.88 \div 0.2 =$

Solution:

$$
\begin{array}{r}
5 \\
35\overline{)175} \\
-175 \\
\hline
0
\end{array}
$$

4) $5.60 \div 0.56 =$ 5) $4.25 \div 0.5 =$

To Check:

$$
\begin{array}{r}
35 \\
\times\ \ 5 \\
\hline
175
\end{array}
$$

Notes to the Learner

Remember that the dividend is a number to be divided by another number while a divisor is a number that divides another number either completely or with a remainder. If the dividend is smaller than the divisor, you can get a decimal quotient. Most of the time, when a number is not divisible by a given divisor, you get quotients with remainders.

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What's New

In the previous lessons, you were taught how to divide decimals with up to 2 decimal places. In this lesson, we will deal with division of whole numbers with quotients in decimal form. And just as there is a correct way to divide whole numbers with whole number quotients, so too, there is a correct way to divide whole numbers with decimal quotients.

Activity 1:

Since the Enhanced Community Quarantine (ECQ) started, Food establishments were mandated to close, following the health safety protocols. After almost three months, the ECQ was lifted and a new order was released under General Community Quarantine (GCQ), in which food establishments are already allowed to operate as long as their services are strictly for take-out only. Karen and her three siblings, together with their parents, have been craving for pizza during the lockdown. So, she ordered 9 whole pizzas in different flavors and toppings for the 6 of them. If each member of the family ate an equal amount of the 9 whole pizzas. How much pizza did each of them eat?
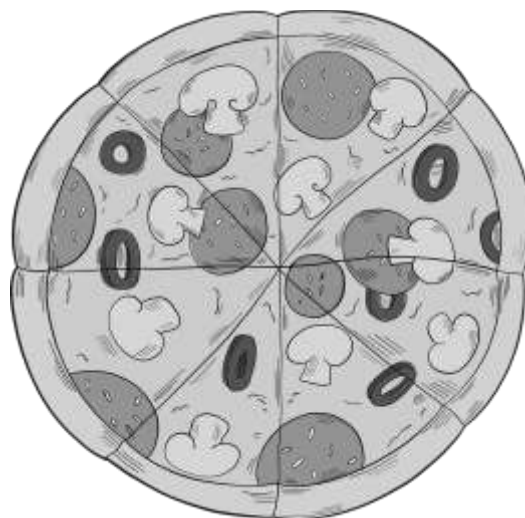
? What Is It

To divide whole numbers with decimal quotients, write a decimal point in the dividend and a zero in the tenths place of the dividend. Divide, then write the answer without a remainder and you can add zeros in the dividend and continue dividing. To check your answer, multiply the quotient and the divisor. The answer must be equal to the dividend.

Let's go over with the word problem from Activity 1, following these steps:
Step 1: Write a decimal point in the dividend and a zero in the tenths place of the dividend.

$$6\overline{)9.0}$$

Step 2: Divide. Continue dividing until the difference is equal to zero.

$$
\begin{array}{r}
1.5 \\
6\overline{)9.0} \\
-6 \\
\hline
3\,0 \\
-3\,0 \\
\hline
0
\end{array}
$$

Step 3: Check: Multiply the quotient and the divisor, the answer must be equal to the dividend.   1.5 x 6 = 9.0

Hence, each of the family member ate **1.5** or **o**f the 9 pizzas.

Activity 2:

Myrna made 12 tuna sandwiches for her 16 friends who work as front liners in their barangay. If her friends ate the same amount of the sandwiches she made, what part of the sandwich did each of her friends eat?
We can use these steps:

Solution:
Step1: $16\overline{)12.0}$ **Step 2**:
$$
\begin{array}{r}
0.75 \\
16\overline{)12.00} \\
-0 \\
\hline
120 \\
-112 \\
\hline
80 \\
-80 \\
\hline
0
\end{array}
$$
     Step 3: 0.75 x 16 = 12.00

Hence, each of her friends ate 0.75 or $\frac{3}{4}$ of a piece of sandwich.

Remember: If the dividend is less than the divisor:
- Write zero as the quotient of the dividend and the divisor.
- Multiply the quotient 0 by the divisor. Write your product below the dividend, then, subtract.
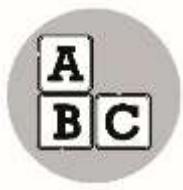
Let's have another example

A 20 kilograms of rice will be shared by 8 people. How many kilograms will each receive?

Solution:

Step1: $8\overline{)20.0}$ **Step 2**: $8\overline{)\begin{array}{l}2.5\\20.0\\-16\\40\\-40\\0\end{array}}$ **Step 3**: 2.5 x 8 = 20.0

Therefore, each will receive 2.5 kilograms of rice.

What's More

The activities below will require you to have an extra sheet of paper for your final answers and solutions. Answer each one diligently.

Independent Activity 1

Directions: Find the quotient. Choose the letter of the correct answer.

1.) 6 ÷ 12 =   A. 0.3   B. 0.4   C. 0.5   D. 0.8

2.) 12 ÷ 15 =   A. 0.3   B. 0.4   C. 0.5   D. 0.8

3.) 36 ÷ 40 =   A. 0.4   B.0. 8   C. 0.7   D. 0.9

4.) 25 ÷ 125 =   A. 0.2   B. 0.5   C. 0.6   D. 0.9

5.) 42 ÷ 56 =   A. 0.75   B. 0.85   C. 0.88   D. 0.95

Independent Activity 2

Directions: Read carefully and supply the missing parts of the process in each solution if needed.

1) If we divide 50 by 200, where should the decimal point be placed?

$$200\overline{)50} \qquad = \underline{\qquad}$$

2)

$$
\begin{array}{r}
0.5 \\
60\overline{)30.0} \\
-\ 0 \\
\hline
\boxed{} \\
-\ 300 \\
\hline
0
\end{array}
$$

3)

$$
\begin{array}{r}
\boxed{} \\
86\overline{)43.0} \\
0 \\
-430 \\
\hline
430 \\
0
\end{array}
$$

4) To check we multiply the quotient and the _____, the answer must be equal to the dividend.

5) When dividing whole numbers with decimal quotients we continue dividing until the _____ is equal to zero.

Independent Activity 3

Directions: Match the number sentence in Column A with the quotients in Column B. Use an extra piece of paper for your solutions.

COLUMN A	COLUMN B
1.) $25 \div 50 = N$	A.) 0.75
2.) $56 \div 80 = N$	B.) 0.99
3.) $36 \div 48 = N$	C.) 0.6875
4.) $99 \div 100 = N$	D.) 0.5
5.) $55 \div 80 = N$	E.) 0.7

What I Have Learned

How do we divide whole numbers with decimal quotients?
- ✓ First, put a decimal point in the dividend and a zero in the tenths place of the dividend.
- ✓ Then, divide. Continue dividing until the difference is equal to zero.
- ✓ Lastly, check your answer by multiplying the quotient and the divisor.
- ✓ The answer must be equal to the dividend.

What have you observed in the process of dividing whole numbers with quotients in decimal form? List down your observations in dividing decimals with up to 2 decimal places and those decimals having 1 decimal place only?

Observation 1: _____

Observation 2: _____

Observation 3: _____

What I Can Do

Directions: Solve the following word problems. Write your answers in complete solution. Use an extra sheet of paper.

1) Brenda cut 84 inches from a spool of green thread. She needs to tie the threads to her customized 15 bookmarks. How many inches of thread were placed on each bookmark?

2) The teacher brought 24 pieces of cupcakes to school and it has to be equally divided among her 40 students. How much cupcakes did each student get?

3) Mother bought 5 meters of lace. She wants to cut it into 20 pieces. How long is each piece?

Have you already mastered the process in dividing whole numbers with quotients in decimal form? Let's try to evaluate how much have you learned. Have an extra sheet of paper for your solutions and final answers. Be honest, refrain from checking the answers key while answering to assess yourself on this lesson.

Assessment

Directions: Perform as directed. Write the letter of the correct answer in your answer sheet.

1.) Solve for Y in the number sentence 6 ÷ 8 = Y.

    A. 0.25   B. 0.45   C. 0.75   D. 0.90

2.) Find the quotient of 23 ÷ 46.

    A. 0.25   B. 0.5   C. 4.5   D. 4.7

3.) If you divide 12 by 15, what is the answer?

   A. 0.21   B. 0.22   C. 0.23   D. 0.8

4.) If you divide 7 by 28 the quotient is ____.

   A. 0.03   B. 0.05   C. 0.25   D. 0.43

5.) When you divide 35 by 140, the quotient is ____?

   A. 0.22   B. 0.23   C. 0.25   D. 0.32

6.) A piece of string is 372 dm long. How many pieces of 25 dm long can be cut from it?

   A. 14.88   B. 16.22   C. 18.75   D. 19.35

7.) Analyn brought home 6 pieces of suman. If she has 8 siblings, how will she divide them equally among them?

   A. 0.25 or $\frac{1}{4}$ of a piece of suman.

   B. 0.50 or $\frac{1}{2}$ of a piece of suman.

   C. 0.75 or $\frac{3}{4}$ of a piece of suman.

   D. 1 piece of suman.

8.) A dressmaker has a 49 m cloth. She plans to make 50 pillowcases from it. How many meters will she use for each pillowcase?

   A. 0.98   B. 87.5   C. 98.5   D. 99.8

9.) A 24 m string is to be divided into 30 pieces. How long would each one be?

   A. 0.25 m   B. 0.50 m   C. 0.80 m   D. 5.43 m

10.) Aling Maria has 3 hectares of land. She wants to divide it equally to her 5 children. How many hectares will the share of each child be?

   A. 0.72   B. O.60   C. 0.29   D. 0.24

Number Puzzle Involving Decimals

Directions: Think of whole numbers and/or decimals with 1 or 2 decimal places that will complete the equations in the box. Find the quotient. Round your answer to the nearest tenths if necessary. The boxes with the yellow color are the ones you need to answer. Copy this activity in your Math notebook.

	÷	**15**	=	
÷		÷		÷
50	−		=	**20**
=		=		=
0.24				**0.04**

Answer Key

What I Know

1. B
2. A
3. B
4. A
5. B
6. A
7. B
8. C
9. A
10. C

What's In

1. 5
2. 37.5
3. 14.4
4. 10
5. 8.5

What I Can Do

1. 5.6
2. 0.6 or $\frac{3}{5}$ of a piece of cupcake
3. 0.25

What I Have Learned

Varied answers from the learners based on their observations

Assessment

1. C
2. B
3. D
4. C
5. C
6. A
7. C
8. A
9. C
10. B

What's More

Independent activity

#1
1. C
2. D
3. D
4. A
5. A

#2
1. After the digit
2. zero of the dividend
3. 300
4. divisor
5. difference

#3
1. D
2. E
3. A
4. B
5. C

Additional Activities

12	÷	15	=	0.8
÷		÷		÷
50	−	30	=	20
=		=		=
0.24		0.5		0.04

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