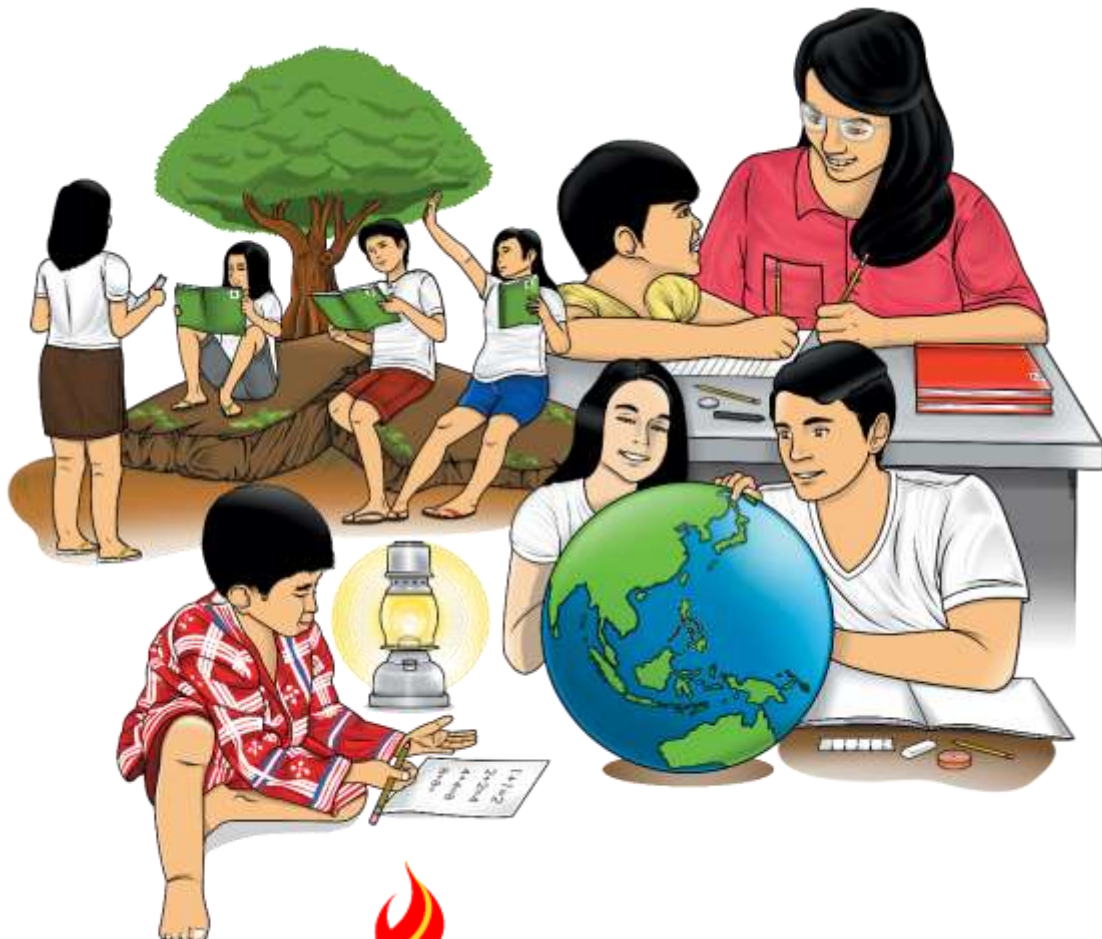


Mathematics

Quarter 1 – Module 15: Visualizing Division of Fractions



Mathematics – Grade 5
Alternative Delivery Mode
Quarter 1 – Module 1: Visualizing Division of Fractions
First Edition, 2020

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Mathematics

Quarter 1 – Module 15: Visualizing Division of Fractions

Introductory Message

For the Facilitator:

Welcome to the Math Grade 5 Alternative Delivery Mode (ADM) Module 15 on Visualizing Division of Fractions!

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 to 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 5 Alternative Delivery Mode (ADM) Module 15 on Visualizing Division of Fractions!

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 is composed of a 10-item activity 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 fill in the blank sentence/paragraph to process what you learned from the lesson.



What I Can Do

This section provides an activity that will help you transfer your new knowledge or skill in real-life situations or concerns.



Assessment

This is another 10-item task that 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 a deep understanding of the relevant competencies. You can do it!



What I Need to Know

In this module, you are going to gain an understanding of visualizing division of fractions. Remember your multiplication skill is still needed as well as your artistic side will be tested. You need to interpret, understand, and solve the problem along the way.

After going through this module, you are expected to visualize division of fractions.

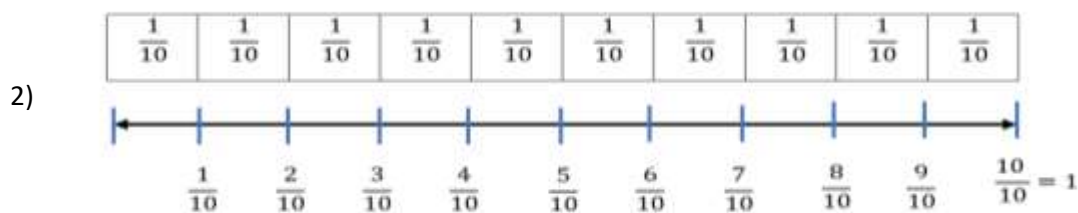
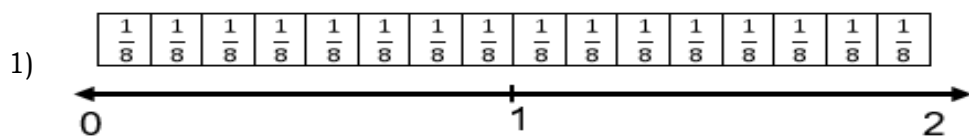


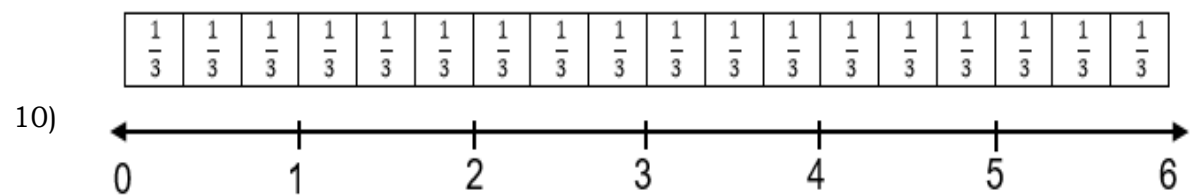
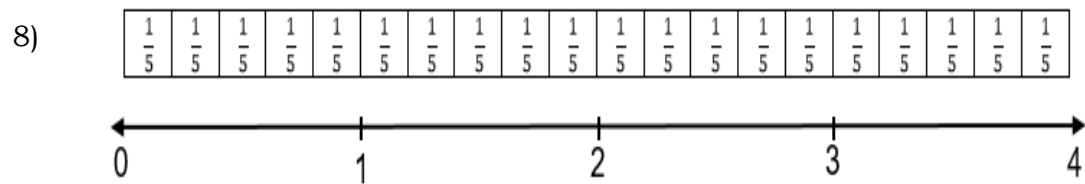
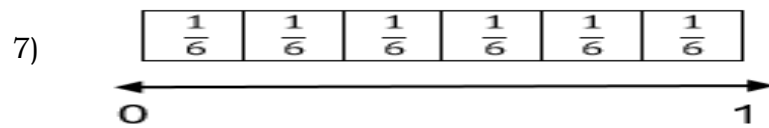
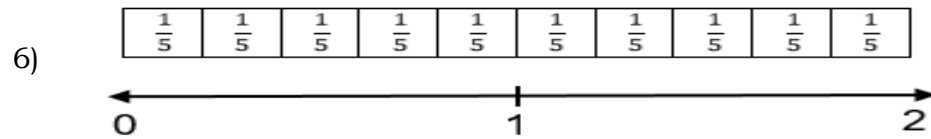
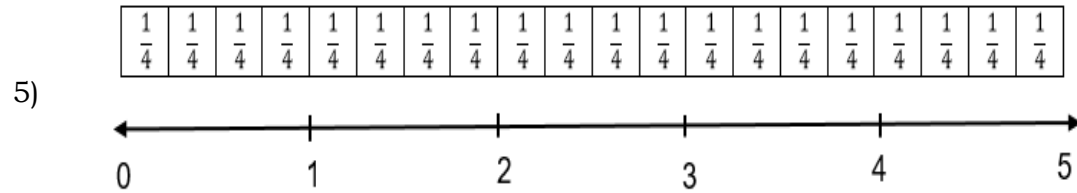
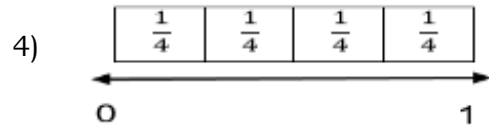
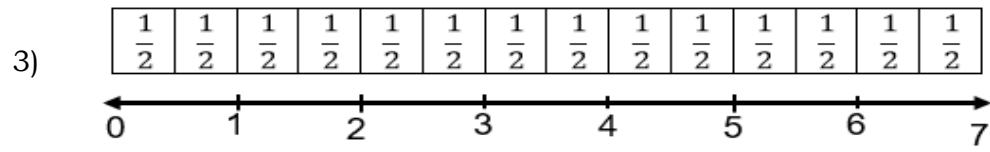
What I Know

Answer the test first before you go over to the lesson proper.

Directions: Give the equation of the following models/illustrations of the division of fractions. Select your answer from the box below.

$2 \div \frac{1}{8} = 16$	$7 \div \frac{1}{2} = 14$	$1 \div \frac{1}{10} = 10$	$6 \div \frac{1}{3} = 18$	$1 \div \frac{1}{6} = 6$
$1 \div \frac{1}{8} = 8$	$1 \div \frac{1}{4} = 4$	$4 \div \frac{1}{5} = 20$	$2 \div \frac{1}{5} = 10$	$5 \div \frac{1}{4} = 20$





Lesson

1

Visualizing Division of Fractions



What's In

In the previous module, you have learned how to multiply fractions using models.

In multiplying fractions using models: It can be represented by a square or a rectangle, divide the rectangle or square into equal parts according to the fractions given. The part of the whole representing the product is the region that has been double shaded.

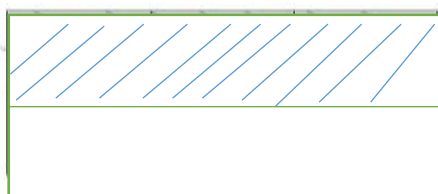
Given are the representations of multiplication using models.

To find the answer to $\frac{1}{2} \times \frac{1}{3}$, get $\frac{1}{2}$ of $\frac{1}{3}$, follow the steps below:

Step 1. Look at the denominator of both fractions, 2 and 3.

$$\frac{1}{2} \times \frac{1}{3}$$

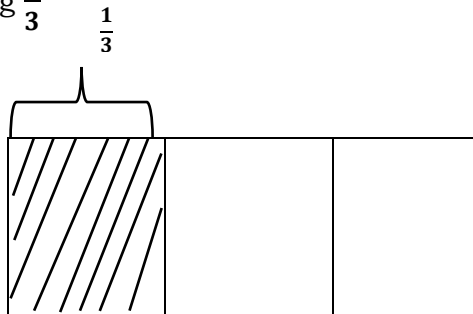
Step 2. Draw a rectangle, divide it into two equal parts and shade 1 part showing $\frac{1}{2}$.



$$\left\{ \frac{1}{2} \right.$$

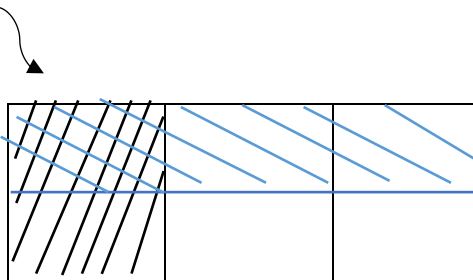
Step 3. Divide again the rectangle into three equal parts and shade 1 part

showing $\frac{1}{3}$



Step 4. Put together the figures in Steps 2 and 3 and mark the double shaded part with reference to the whole figure.

$\frac{1}{6}$



Step 5. Write an equation.

$$\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$$

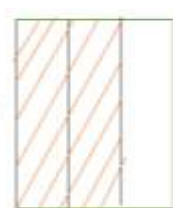
Try this!

Directions: Draw the model of the fractions given below. The first one is done for you.

1) $\frac{1}{3} \times \frac{2}{3} = \frac{2}{9}$



\times



$=$



$$2) \frac{3}{5} \times \frac{1}{2} = ?$$

$$3) \frac{2}{4} \times \frac{1}{2} = ?$$

$$4) \frac{2}{5} \times \frac{1}{2} = ?$$

Note:

Recall that multiplication and division are inverse operations. So, in no. 1 where $\frac{1}{3} \times \frac{2}{3} = \frac{2}{9}$ it follows that

$$\frac{2}{9} \div \frac{1}{3} = \frac{2}{3} \quad \text{and}$$

$$\frac{2}{9} \div \frac{2}{3} = \frac{1}{3}$$



What's New

Visualizing Division of Fractions

Problem:

Glenn's best friend is celebrating her birthday next week. He wants to surprise her best friend with a gift. He has 1 meter of ribbon, and he will use this to design a flower and wrap around the box for the gift. Will it be enough if he consumes $\frac{1}{4}$ meter for the flower and the remaining to wrapped around the box?

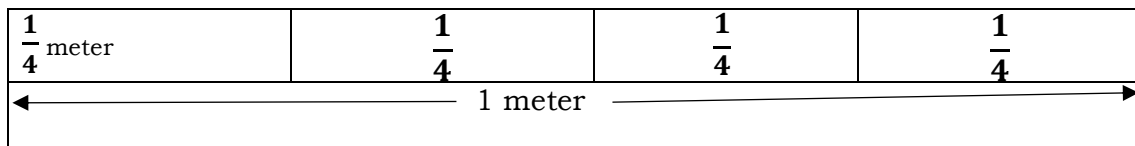
Make a representation of the problem stated above.

You may use bar or whatever you want to show or represent the problem. Carefully study and analyze it. Write your answer in your activity notebook.



What Is It

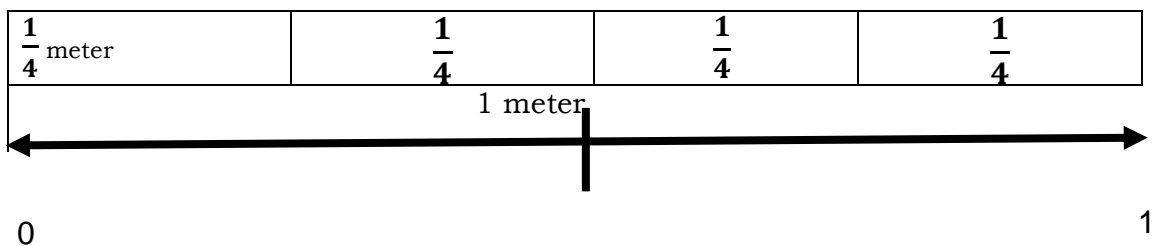
To answer the problem above, consider the illustrations shown below.



Could be expressed as : $1 \div \frac{1}{4} = N$

The expression is read as, “One divided by one-fourth is equal to N”, where N represents the unknown or what will be the answer.

Divide each whole into equal fourths to determine how many fourths are in one whole.



In the number line above, 1 was divided by $\frac{1}{4}$.

How many fourths are in one whole?

Answer: There are 4-fourths in one whole number.

$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{4}{4} = 1$$

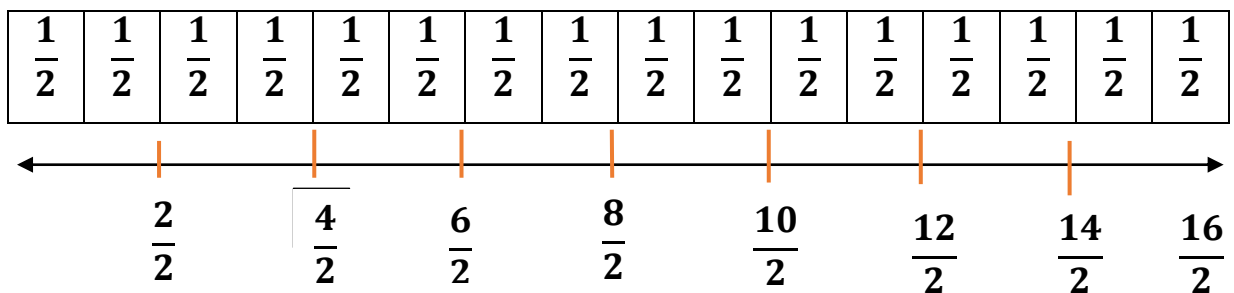
To answer the problem: will it be enough for the flower and to wrap around the box?

$1 - \frac{1}{4} = \frac{3}{4}$ remaining ribbon will be used to wrap around the box

Consider another example below:

$$8 \div \frac{1}{2} = N,$$

Divide each whole into equal halves to determine how many halves are in eight wholes.



$$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = \frac{16}{2} = 8$$

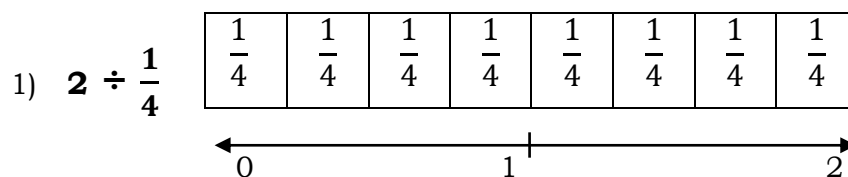
$8 \div \frac{1}{2} = 16$ So, how many halves are there in 8 wholes?

Answer: There are 16 halves in 8 wholes.



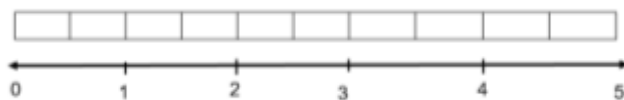
What's More

Directions: Fill in the blanks.



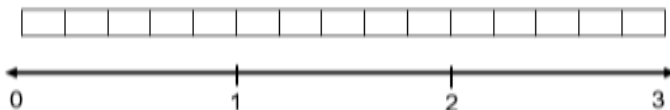
How many _____ are equal to _____? There are _____ fourths.

2) $5 \div \frac{1}{2}$



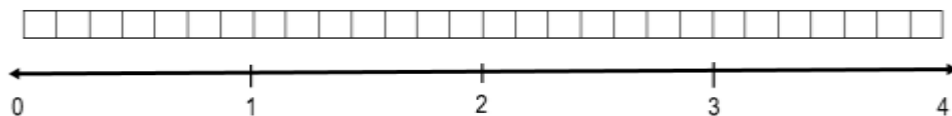
How many _____ are equal to _____? _____

3) $3 \div \frac{1}{5}$



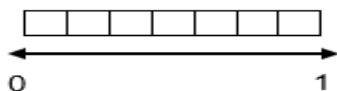
How many _____ are equal to _____? _____

4) $4 \div \frac{1}{7}$



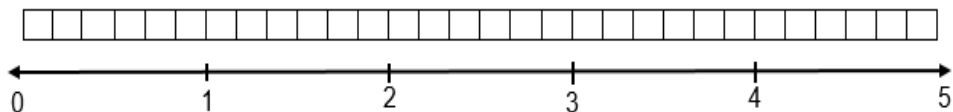
How many _____ are equal to _____? _____

5) $1 \div \frac{1}{7}$



How many _____ are equal to _____? _____

6) $5 \div \frac{1}{6}$



How many _____ are equal to _____? _____



What I Have Learned

To find out what you have learned on this module in visualizing division of fractions. Make a reflection on how to illustrate division of fractions. Write your answers in your journal notebook, also answer A and B.

A. Present how is “Four divided by one-third is equal to N” is written.

B. Show or illustrate the given below;

$$3 \div \frac{1}{2} = N$$



What I Can Do

Try to do the task given below.

A. **Directions:** Write the expression and give the answer.

ILLUSTRATION	EXPRESSION
<p>1.</p>	<p>_____</p> <p>_____</p>
<p>2.</p>	<p>_____</p> <p>_____</p>
<p>3.</p>	<p>_____</p> <p>_____</p>
<p>4.</p>	<p>_____</p> <p>_____</p>
<p>5.</p>	<p>_____</p> <p>_____</p>



Assessment

Ready! Enjoy in answering the test.

Test I

Directions: Match the equation with the corresponding illustration/model.

1) $7 \div \frac{1}{3}$



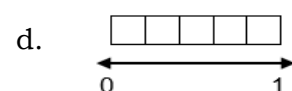
2) $\frac{1}{4} \div 3$



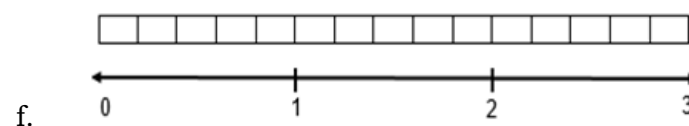
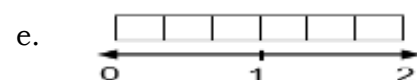
3) $\frac{1}{3} \div 3$



4) $2 \div \frac{1}{3}$

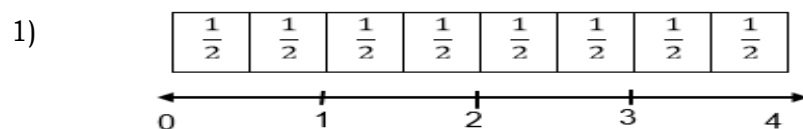


5) $1 \div \frac{1}{5}$



Test II

Directions: Choose the letter of the correct equation that fits the illustration of the division of fractions given below.

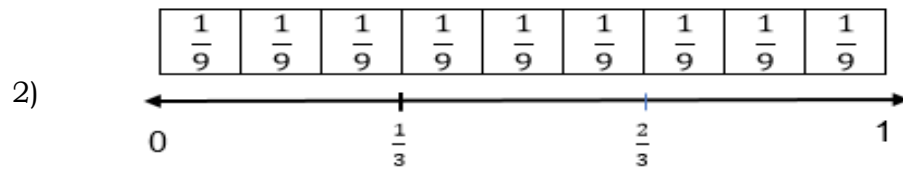


A. $8 \div \frac{1}{2} = 16$

C. $4 \div \frac{1}{2} = 8$

B. $2 \div \frac{1}{2} = 4$

D. $6 \div \frac{1}{2} = 12$

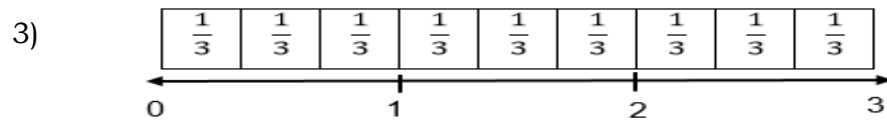


A. $\frac{1}{3} \div 3 = \frac{1}{9}$

C. $3 \div \frac{1}{9} = 27$

B. $\frac{1}{9} \div 1 = \frac{1}{9}$

D. $2 \div \frac{1}{9} = 18$

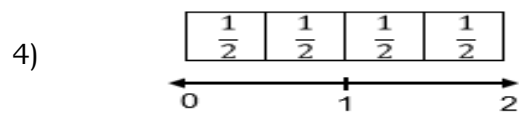


A. $\frac{1}{3} \div 3 = \frac{1}{9}$

C. $3 \div \frac{1}{3} = 9$

B. $9 \div \frac{1}{3} = 27$

D. $3 \div \frac{1}{9} = 27$

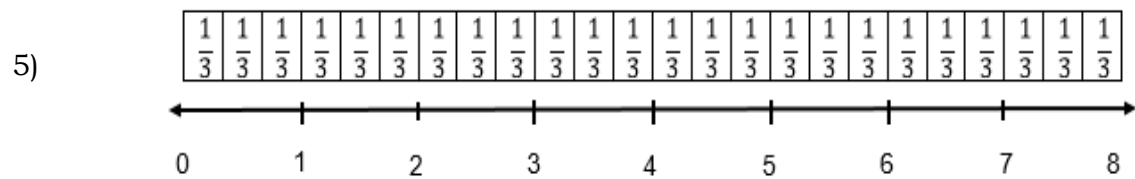


A. $\frac{1}{2} \div 2 = \frac{1}{4}$

C. $2 \div \frac{1}{2} = \frac{4}{1}$ or 4

B. $2 \div \frac{1}{4} = \frac{8}{1}$ or 8

D. $3 \div \frac{1}{2} = 6$



A. $\frac{1}{3} \div 8 = \frac{1}{24}$

C. $\frac{1}{8} \div \frac{1}{3} = \frac{3}{8}$

B. $8 \div \frac{1}{3} = \frac{24}{1}$ or 24

D. $3 \div \frac{1}{3} = 9$



Additional Activities

Here's an additional task.

Directions: Illustrate division of fraction using a number line.

1) $3 \div \frac{1}{2} = N$

2) $2 \div \frac{1}{7} = N$

3) $7 \div \frac{1}{4} = N$

4) $4 \div \frac{1}{6} = N$

5) $\frac{1}{3} \div 4 = N$



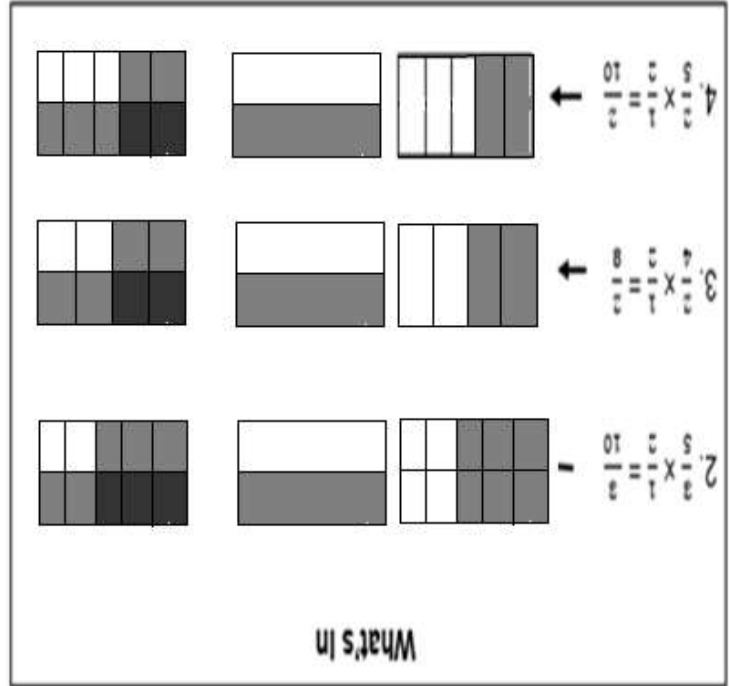
Answer Key

1. $2 \div \frac{1}{16} = \frac{1}{16}$ or 16
2. $1 \div \frac{1}{10} = 10$
3. $7 \div \frac{1}{14} = \frac{1}{14}$ or 14
4. $1 \div \frac{1}{4} = \frac{1}{4}$ or 4
5. $5 \div \frac{1}{20} = \frac{1}{20}$ or 20
6. $2 \div \frac{1}{10} = \frac{1}{10}$ or 10
7. $1 \div \frac{1}{6} = \frac{1}{6}$ or 6
8. $4 \div \frac{1}{20} = \frac{1}{20}$ or 20
9. $1 \div \frac{1}{8} = 8$
10. $6 \div \frac{1}{18} = \frac{1}{18}$ or 18

What I Know

2. How many halves are equal to 5 wholes?
There are 10 halves.
3. How many fifths are equal to 3 wholes? There are 15 fifths.
4. How many sevenths are equal to 4 wholes?
There are 28 sevenths.
5. How many sevenths are equal to 1 whole? There are 7 sevenths.
6. How many sixths are equal to 5 wholes?
There are 30 sixths.

What's More



What I Can Do

- A.
 1. $3 \div \frac{1}{5} = N$
 2. $2 \div \frac{1}{9} = N$
 3. $4 \div \frac{1}{4} = N$
 4. $1 \div \frac{1}{8} = N$
 5. $9 \div \frac{1}{2} = N$

$$9 \div \frac{1}{2} = \frac{1}{18} \text{ or } 18$$

$$1 \div \frac{1}{8} = \frac{1}{8} \text{ or } 8$$

$$4 \div \frac{1}{4} = \frac{1}{16} \text{ or } 16$$

$$2 \div \frac{1}{18} = \frac{1}{18} \text{ or } 18$$

$$3 \div \frac{1}{15} = \frac{1}{15} \text{ or } 15$$

What I have learned

A. $4 \div \frac{1}{2} = N$

B.

$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$

$$\frac{1}{2} \quad \frac{2}{2} \quad \frac{3}{2}$$

$$3 \div \frac{1}{2} = 6$$

Assessment
Test II

1. C
2. A
3. C
4. C
5. B

Additional Activities

1.

2.

3.

4.

5.

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"Promoting Success". 2020. Teachers Pay Teachers.

<https://www.teacherspayteachers.com/store/promoting-Success>.

Yusuf. 2020. "Multiplying and Dividing Fraction". *Slideshare.Net*.

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