

Multiplying Two Fractions

Musa and Karen are riding a bike path that is $\frac{4}{5}$ mile long. Karen's bike got a flat tire $\frac{3}{10}$ of the way down the path and she had to stop. How many miles did Karen ride?

NT1 Day 6

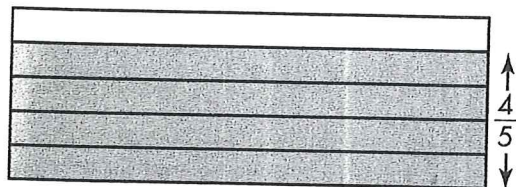
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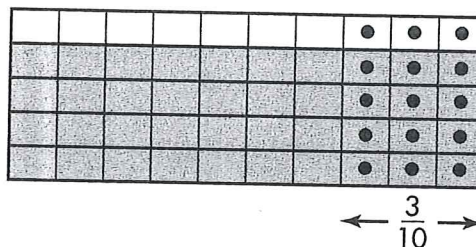
S. NF. 5

You can find the product of two fractions by drawing a diagram.

Step 1. Draw a diagram using shading to represent $\frac{4}{5}$.



Step 2. Draw lines vertically using dots to represent $\frac{3}{10}$.



Step 3. Count the parts of the diagram that are shaded and dotted. This is the product numerator.

12

Step 4. Count the total number of parts of the diagram. This is the product denominator.

50

Step 5. Simplify if possible.

$$\frac{12}{50} = \frac{6}{25}$$

EXAMPLE

Another way to find the product:

Step 1. Multiply the numerators: $4 \times 3 = 12$.

Step 2. Multiply the denominators: $5 \times 10 = 50$.

Step 3. Simplify if possible: $\frac{12}{50} = \frac{6}{25}$.

In 1 through 6, find the product. Simplify if possible.

1. $\frac{1}{3} \times \frac{2}{5} =$ _____

2. $\frac{5}{8} \times \frac{1}{4} =$ _____

3. $\frac{5}{6} \times \frac{3}{10} =$ _____

4. $\frac{1}{2} \times 6 =$ _____

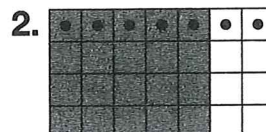
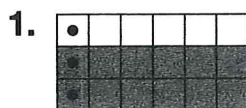
5. $14 \times \frac{3}{7} =$ _____

6. $\frac{3}{5} \times \frac{1}{2} \times \frac{6}{7} =$ _____

7. Using a diagram, show $\frac{3}{7} \times \frac{1}{4}$.

Multiplying Two Fractions

Write the multiplication problem that each model represents then solve. Put your answer in simplest form.



Find each product. Simplify if possible.

3. $\frac{7}{8} \times \frac{4}{5} =$ _____

4. $\frac{3}{7} \times \frac{2}{3} =$ _____

5. $\frac{1}{6} \times \frac{2}{5} =$ _____

6. $\frac{2}{7} \times \frac{1}{4} =$ _____

7. $\frac{2}{9} \times \frac{1}{2} =$ _____

8. $\frac{3}{4} \times \frac{1}{3} =$ _____

9. $\frac{3}{8} \times \frac{4}{9} =$ _____

10. $\frac{1}{5} \times \frac{5}{6} =$ _____

11. $\frac{2}{3} \times \frac{5}{6} \times 14 =$ _____

12. $\frac{1}{2} \times \frac{1}{3} \times \frac{1}{4} =$ _____

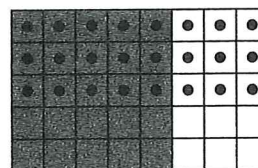
13. If $\frac{4}{5} \times \blacksquare = \frac{2}{5}$, what is \blacksquare ? _____

14. In Mrs. Marshall's classroom, $\frac{6}{7}$ of the students play sports. Of the students who play sports, $\frac{4}{5}$ also play an instrument. If there are 35 students in her class, how many play sports and an instrument?

15. Which does the model represent?

A $\frac{3}{8} \times \frac{3}{5}$
B $\frac{7}{8} \times \frac{2}{5}$

C $\frac{3}{5} \times \frac{5}{8}$
D $\frac{4}{8} \times \frac{3}{5}$



16. Describe a model that represents $\frac{3}{3} \times \frac{4}{4}$

Area of a Rectangle

You have learned how to multiply fractions by finding the area of a rectangle.

What is the area of a horse pasture that is $\frac{3}{8}$ mile long by $\frac{2}{3}$ mile wide?

You can draw the pasture on a 24×24 grid.

$$\frac{3}{8} = \frac{9}{24}$$

Change each length and width to 24ths.

$$\frac{2}{3} = \frac{16}{24}$$

Area = length \times width

$$\frac{2}{3} \times \frac{3}{8} =$$

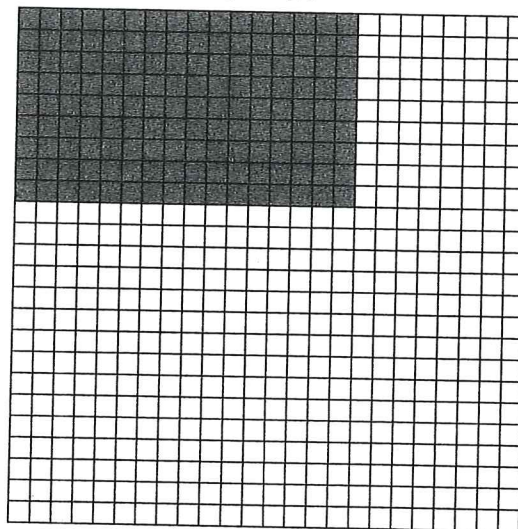
$$\frac{16}{24} \times \frac{9}{24} = \frac{144}{576}$$

$$\frac{144}{576} = \frac{1}{4}$$

So, the pasture has an area of $\frac{1}{4}$ square mile.

EXAMPLE

$$\frac{2}{3} = \frac{16}{24}$$



$$\frac{3}{8} = \frac{9}{24}$$

For questions 1-2, find each area.

1. a rectangle with sides of lengths $\frac{1}{6}$ yard and $\frac{3}{4}$ yard _____
2. a square with sides of lengths $\frac{2}{5}$ inch _____
3. **Writing to Explain** Is $\frac{5}{8}$ sq. in. a reasonable answer for the area of a rectangle with lengths of $\frac{1}{8}$ inch by 5 inches?

Name _____

Practice

11-5

Area of a Rectangle

Find each area.

1. a rectangle with sides of lengths $\frac{4}{5}$ foot and $\frac{1}{2}$ foot

2. a rectangle with sides of lengths $\frac{1}{3}$ yard and $\frac{3}{4}$ yard

3. a rectangle with sides of lengths $\frac{2}{3}$ foot and $\frac{1}{3}$ foot

4. a rectangle with sides of lengths $\frac{5}{6}$ inch and $\frac{1}{3}$ inch

5. a square with sides of length $\frac{5}{8}$ inch

6. a rectangle with a length of 3 inches and a width of $\frac{1}{8}$ inch

7. a rectangle with a length of $\frac{1}{5}$ yard and a width of $\frac{2}{3}$ yard

8. a rectangle with a length of $\frac{4}{9}$ foot and a width of 2 feet

9. Mrs. Henley built a cage for her bird. She wanted to cover the bottom of the cage with newspaper. If the cage is $\frac{1}{4}$ yard by $\frac{1}{2}$ yard, what is the area that needs to be covered?

A $\frac{1}{8}$ sq. yd

B $\frac{1}{4}$ sq. yd

C $\frac{1}{2}$ sq. yd

D 8 sq. yd

10. **Writing to Explain** Tariq and Marie each multiplied $\frac{1}{8}$ inch \times $\frac{5}{8}$ inch. Tariq got $\frac{5}{8}$ sq. in. and Marie got $\frac{5}{64}$ sq. in. Which student found the correct area?

How do you know?

Poetry Slam

Have you ever written a poem?

- 1 "For the next two weeks, we're going to be talking about and writing poetry," Ms. Jorge told her class. "What comes to mind when you think about poetry?" she asked.
- 2 "Feelings and personal thoughts," Maya said.
- 3 "Rhyming words," said Maurice.
- 4 "Descriptive words," said Taylor.
- 5 "Images that tell a story," said Ana.
- 6 "Those are all excellent answers," said Ms. Jorge. "One reason I love poetry is because of its diversity. You can find a poem to fit any mood or feeling. Some poems make you laugh, and others make you think. Poems can remind you of things you have forgotten, and they can take you places you have never been."
- 7 "I didn't hear any of you use the words *exciting* or *competitive* to talk about poetry," said Ms. Jorge. "What do those words make you think of?"
- 8 Maya raised her hand. "They make me think of sports," she answered. "Poetry seems quieter and more serious."
- 9 Ms. Jorge smiled. "We're going to learn about a form of poetry today that might change your mind. A poetry slam is a competition for poets. Each poet has three minutes to deliver his or her poem. The judges are all chosen from the audience. The poets are judged on the content of the poems and on the way they present the poems. After a poet finishes, the judges hold up signs to show the scores they've given the poet. The scores range from one to ten, with ten being a perfect score."
- 10 "That almost sounds like an Olympic event," joked Taylor.
- 11 Ms. Jorge nodded. "It's a different way of becoming involved with poetry," she said. "Anyone can try it. Throughout history, poetry has been a part of the oral tradition. It is meant to be spoken or read aloud. Many types of

poetry would never have survived if they had not been passed down through the generations by word of mouth."

- 12 "Are there poetry slams for kids?" asked Maurice.
- 13 "Yes, they have been popping up all around the country in the last few years," answered Ms. Jorge. "There is even a Youth Poetry Slam League and a national competition."
- 14 "Don't kids get nervous reciting their poetry in front of a big audience?" wondered Ana.
- 15 "I'm sure they do get nervous," said Ms. Jorge. "But they also enjoy having a chance to share their feelings and get new perspectives on things. Some of the poets like the excitement and the competitive atmosphere. Others like the support of being with and performing for other poets."
- 16 Ms. Jorge walked to her desk and picked up a stack of paper. "Does anyone know where we'll be going on our next field trip?" she asked. When no one had an idea, she continued. "The city of Riverview will be holding its first youth poetry slam at the Book Nook. I'm passing around applications right now. I encourage all of you to think about performing!"



Vocabulary Skills

Write the words from the story that have the meanings below.

1. variety; different types

_____ Par. 6

2. to speak or present

_____ Par. 9

3. the amount something can vary or be different

_____ Par. 9

4. spoken aloud

_____ Par. 11

5. particular ways of viewing something

_____ Par. 15

Read each word below. Then, write the letter of its synonym on the line beside the word.

- | | |
|--------------------|-------------|
| 6. _____ responded | a. select |
| 7. _____ often | b. varied |
| 8. _____ choose | c. replied |
| 9. _____ different | d. frequent |

A **word family** is a group of words that have the same letter combinations. For example, the words *could*, *would*, and *should* are in the same word family, because they all contain the **-ould** combination. Circle the words in each row that are part of the word family in parentheses.

10. (-ight) bring bright tonight tomorrow
 11. (-ought) fought thin thought then
 12. (-ight) midday light linger midnight

Reading Skills

Write **F** before the sentences that are facts.

Write **O** before the sentences that are opinions.

- _____ Poetry can be exciting.
- _____ Ms. Jorge's class will be going on a field trip to a poetry slam.
- _____ Poetry slams can be interesting to attend.
- _____ Poetry has been a part of the oral tradition throughout history.
- _____ Ms. Jorge enjoys poetry.
- Do you think any of Ms. Jorge's students will participate in the poetry slam? Explain your answer.

7. What is a poetry slam?

8. Why do you think Taylor says that a poetry slam sounds like an Olympic event?

9. Name two things that Ms. Jorge says kids enjoy about poetry slams.

Human and Physical Characteristics

Just as every person is unique, every location is different and can be described by its human characteristics and its physical characteristics.

Human characteristics are those traits associated with a location based on the culture of the people that inhabit the area. For example:

- Language
- Religion
- Housing

Language

The nation of Mexico and the countries of South America were colonized by Spain and Portugal, and as a result, the languages spoken in that part of the world are Spanish and Portuguese. Today, Mexico is known as a Spanish-speaking nation, just as Brazil is known as a Portuguese-speaking nation. Certain countries are often linked together based on a common language, even though they are not located near one another, such as the English-speaking nations of Great Britain, the United States, and Australia.

Religion

Nearly the entire population of Israel is Jewish, and as a result, Judaism is strongly identified with the nation of Israel. Vatican City is known as the world center of Catholicism and the home of the Pope. Mecca has great religious significance to Muslims, to the point that daily prayers are required to be made while facing Mecca.

Housing

While modern housing is similar in many parts of the world, certain types of buildings and homes are still closely identified with certain locations. Many people think of castles when

they think of England, which has a long royal history. For years, people associated Alaska with igloos, although an igloo is generally considered a form of emergency or recreational shelter, not a permanent home for most people. The American West in the 19th century was associated with teepees because of the vast Native American population living there.

Physical characteristics are those actual physical traits of a location, such as:

- Landforms
- Climates
- Bodies of water

Landforms

The two primary landforms associated with locations are mountains and plains. In the United States, the states of Colorado, Idaho, and Montana are referred to as Rocky Mountain states, as the Rocky Mountains make up large parts of their geography. By the same token, states such as Kansas, Iowa, North Dakota, South Dakota, Nebraska, and Missouri are known as plains states, because they are largely flat.

Climates

Certain locations are also identified by their climates. For example, what immediately comes to mind when you think of Alaska? How about Texas? Alaska is the northernmost state in the United States and is known for being very cold for much of the year. Texas, on the other hand, is one of the southernmost states, with a dry, hot climate. Northwestern states, such as Washington, are associated with cool, rainy climates, and Southern states, such as Georgia, Tennessee, and South Carolina, are associated with warm, muggy climates.

Bodies of Water

The state of Mississippi is best known for its association with the Mississippi River. Certain states in the Northeastern region of the country, along with bordering areas of Canada, are known as the Great Lakes Region due to their closeness to the five Great Lakes: Lake Huron, Lake Ontario, Lake Michigan, Lake Erie, and Lake Superior. States bordered by the Atlantic Ocean are known as the Eastern Seaboard or East Coast, and states bordered by the Pacific Ocean are known as the West Coast.

Example 1

Arizona and Texas are known for which?

- A. Practicing Islam
- B. The Mandarin language
- C. Large, ancient castles
- D. Warm, dry climates

The correct answer is **D**. Much of Texas and Arizona has warm, dry climates. There is no identifying religion strongly associated with either state. The primary language spoken is English, although there is also a strong Spanish influence (due to their being close to Mexico). The housing style most associated with these areas is "ranch" housing, referring to single-story homes.

Example 2

Which of the following would be a human characteristic?

- A. Climate
- B. Body of water
- C. Religion
- D. Landform

The correct answer is **C**. Religion, language, and housing are human characteristics associated with certain locations. Climate, bodies of water, and landforms are physical characteristics.

Example 3

Which city is most closely tied to religion?


- A. Memphis
- B. Frankfort
- C. Vatican City
- D. New York City

The correct answer is **C**. Vatican City is the center of Catholicism, and the home of the Pope. Memphis, Frankfort, and New York City are not strongly associated with any individual religion.

Critical Thinking 13.1



What are the physical and human characteristics of the place where you live? Give two examples of each and explain why you believe they apply to your location.

I  you a question!

Are Video Games BAD for Kids?

Last night you heard your parents discussing whether they should or should not ban video games in your house. Today you decide to take action and write them a letter telling them your opinion!

Introduction:

Address the Audience and Restate the Situation/Topic.

State your Opinion: Be sure to start Opinion Statement the right way!

List three reasons to support your opinion. Do not forget your commas!!!

Put a Hook on it! Ask your Audience a MEANINGFUL QUESTION:

Reason 1:

The first reason from your Introduction paragraph. (Transitions: First, Initial, to start with)

Example/Detail #1: Transitions: For example, for instance, In fact, Specifically

Example/Detail #2: Transitions: Another example, additionally

Study or Survey: According to the University of Kentucky.... Include a percentage or ratio.

Design A New Sport

NTI 4-5 Day 6

Challenge: Design your own sport that combines two different sports. Make sure it has a Name, Rules/Directions, and tell how it would work. Then draw a picture of your new sport.

Name of Sport:_____

Rules/Directions: _____

Draw A Picture

How to Play

[illegible]