

Dear Family,

Throughout the next few weeks, our math class will be learning about multiplying fractions and mixed numbers. We will also be using area models to help understand fraction multiplication.

You can expect to see homework with real-world problems that involve multiplication with fractions and mixed numbers.

Here is a sample of how your child is taught to multiply two mixed numbers.



MODEL Multiply Mixed Numbers

Multiply. $1\frac{3}{4} \times 2\frac{1}{2}$

STEP 1

Write the mixed numbers as fractions.

STEP 2

Multiply the fractions.

STEP 3

Write the product as a mixed number in simplest form.

$$\begin{aligned} 1\frac{3}{4} \times 2\frac{1}{2} &= \frac{7}{4} \times \frac{5}{2} \\ &= \frac{7 \times 5}{4 \times 2} \\ &= \frac{35}{8} \\ &= 4\frac{3}{8} \end{aligned}$$

Tips

Checking for Reasonable Answers

When a fraction is multiplied by 1, the product equals the fraction. When a fraction is multiplied by a factor greater than 1, the product will be greater than the fraction. When a fraction is multiplied by a factor less than 1, the product will be less than either factor.

Activity

Use recipes to practice multiplication with fractions and mixed numbers. Work together to solve problems such as, "One batch of the recipe calls for $2\frac{1}{4}$ cups of flour. How much flour would we need to make $1\frac{1}{2}$ batches?"

Vocabulary

denominator The part of the fraction below the line, which tells how many equal parts there are in the whole or in a group

mixed number A number represented by a whole number and a fraction

numerator The part of a fraction above the line, which tells how many parts are being counted

product The answer in a multiplication problem

simplest form A fraction in which 1 is the only number that can divide evenly into the numerator and the denominator

Carta para la casa

Querida familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos a multiplicar fracciones y números mixtos.

También aprenderemos a usar modelos de área para entender la multiplicación de fracciones.

Llevaré a la casa tareas con problemas del mundo real que involucren la multiplicación con fracciones y números mixtos.

Este es un ejemplo de la manera como aprenderemos a multiplicar dos números mixtos.

Vocabulario

denominador La parte de la fracción debajo de la barra que indica cuántas partes iguales hay en un total o en un grupo

número mixto Un número representado por un número entero y una fracción

numerador La parte de una fracción por encima de la barra que indica cuántas partes se están contando

producto El resultado de un problema de multiplicación

mínima expresión Una fracción en la que 1 es el único número que se puede dividir en partes iguales entre el numerador y el denominador



MODELO Multiplicar números mixtos

Multiplica. $1\frac{3}{4} \times 2\frac{1}{2}$

PASO 1

Escribe los números mixtos como fracciones.

PASO 2

Multiplica las fracciones.

PASO 3

Escribe el producto como un número mixto en su mínima expresión.

$$\begin{aligned} 1\frac{3}{4} \times 2\frac{1}{2} &= \frac{7}{4} \times \frac{5}{2} \\ &= \frac{7 \times 5}{4 \times 2} \\ &= \frac{35}{8} \\ &= 4\frac{3}{8} \end{aligned}$$

Pistas

Buscar respuestas razonables

Cuando una fracción se multiplica por 1, el producto es igual a la fracción. Cuando una fracción se multiplica por un factor mayor que 1, el producto será mayor que la fracción. Cuando una fracción se multiplica por un factor menor que 1, el producto será menor que ese factor.

Actividad

Usen recetas para practicar la multiplicación con fracciones y números mixtos.

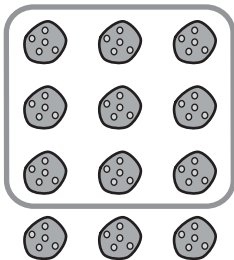
Trabajen juntos para resolver problemas como, "Una porción de la receta pide $2\frac{1}{4}$ tazas de harina. ¿Cuánta harina necesitaremos para hacer $1\frac{1}{2}$ porciones?"

Name _____

Find Part of a Group**Check students' models.****COMMON CORE STANDARD—5.NF.4a**
*Apply and extend previous understandings of multiplication and division to multiply and divide fractions.***Use a model to solve.**

1. $\frac{3}{4} \times 12 = \underline{9}$

2. $\frac{7}{8} \times 16 = \underline{14}$



3. $\frac{6}{10} \times 10 = \underline{6}$

4. $\frac{2}{3} \times 9 = \underline{6}$

5. $\frac{1}{6} \times 18 = \underline{3}$

6. $\frac{4}{5} \times 10 = \underline{8}$

Problem Solving

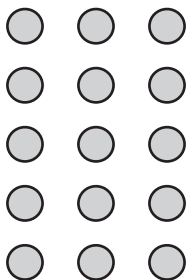
7. Marco drew 20 pictures. He drew $\frac{3}{4}$ of them in art class. How many pictures did Marco draw in art class?

8. Caroline has 10 marbles. One half of them are blue. How many of Caroline's marbles are blue?

15 pictures**5 marbles**

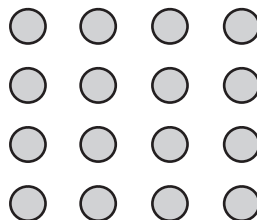
Lesson Check (5.NF.4a)

1. Use the model to find $\frac{1}{3} \times 15$.



5

2. Use the model to find $\frac{2}{4} \times 16$.



8

Spiral Review (5.NBT.1, 5.NBT.6, 5.NF.1, 5.NF.2)

3. What is the value of the underlined digit?

6,560

6,000

4. Nigel has 138 fluid ounces of lemonade. How many 6-fluid-ounce servings of lemonade can he make?

23 servings

5. Rafi had a board that was $15\frac{1}{2}$ feet long. He cut three pieces off the board that are each $3\frac{7}{8}$ feet long. How much of the board is left?

$3\frac{7}{8}$ feet

6. Susie spent $4\frac{1}{4}$ hours on Monday and $3\frac{5}{8}$ hours on Tuesday working on a history project. About how long did she spend working on the project?

about 8 hours

Name _____

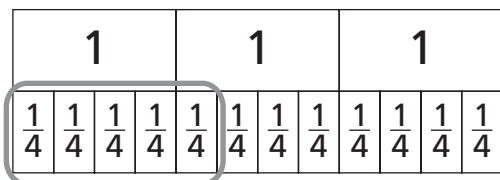
Multiply Fractions and Whole Numbers



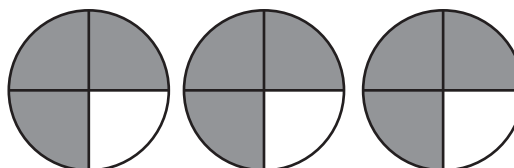
COMMON CORE STANDARD—5.NF.4a
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Use the model to find the product.

1. $\frac{5}{12} \times 3 = \frac{5}{4}$, or $1\frac{1}{4}$



2. $3 \times \frac{3}{4} = \frac{9}{4}$, or $2\frac{1}{4}$



Find the product.

3. $\frac{2}{5} \times 5 = \underline{2}$

4. $7 \times \frac{2}{3} = \frac{14}{3}$, or $4\frac{2}{3}$

5. $\frac{3}{8} \times 4 = \frac{3}{2}$, or $1\frac{1}{2}$

6. $7 \times \frac{5}{6} = \frac{35}{6}$, or $5\frac{5}{6}$

7. $\frac{5}{12} \times 6 = \frac{5}{2}$, or $2\frac{1}{2}$

8. $9 \times \frac{2}{3} = \underline{6}$

Problem Solving



9. Jody has a 5-pound bag of potatoes. She uses $\frac{4}{5}$ of the bag to make potato salad. How many pounds of potatoes does Jody use for the potato salad?

4 pounds

10. Lucas lives $\frac{5}{8}$ mile from school. Kenny lives twice as far as Lucas from school. How many miles does Kenny live from school?

$\frac{10}{8}$, or $1\frac{1}{4}$ miles

Lesson Check (5.NF.4a)

1. In gym class, Ted runs $\frac{4}{5}$ mile. His teacher runs 6 times that distance each day. How many miles does Ted's teacher run each day?
2. Jon is decorating a banner for a parade. Jon uses a piece of red ribbon, which is $\frac{3}{4}$ yard long. Jon also needs blue ribbon that is 5 times as long as the red ribbon. How much blue ribbon does Jon need?

$4\frac{4}{5}$ miles

$3\frac{3}{4}$ yards

Spiral Review (5.OA.1, 5.NBT.3b, 5.NF.2, 5.NF.3)

3. Mirror Lake Elementary School has 168 students and chaperones going on the fifth grade class trip. Each bus can hold 54 people. What is the least number of buses needed for the trip?
4. From an 8-foot board, a carpenter sawed off one piece that was $2\frac{3}{4}$ feet long and another piece that was $3\frac{1}{2}$ feet long. How much of the board was left?

4 buses

$1\frac{3}{4}$ feet

5. What is the value of the expression?
 $30 - 5 \times 4 + 2$
6. Which of the following decimals has the least value? 0.3; 0.029; 0.003; 0.01

12

0.003

Name _____

Fraction and Whole Number Multiplication**COMMON CORE STANDARD—5.NF.4a**
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Find the product. Write the product in simplest form.

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

2. $\frac{2}{9} \times 3 = \underline{\frac{2}{3}}$

3. $\frac{4}{5} \times 10 = \underline{8}$

$4 \times \frac{5}{8} = \frac{20}{8}$

$\frac{20}{8} = 2\frac{4}{8}, \text{ or } 2\frac{1}{2}$

4. $\frac{3}{4} \times 9 = \underline{\frac{27}{4}, \text{ or } 6\frac{3}{4}}$

5. $8 \times \frac{5}{6} = \underline{\frac{20}{3}, \text{ or } 6\frac{2}{3}}$

6. $7 \times \frac{1}{2} = \underline{\frac{7}{2}, \text{ or } 3\frac{1}{2}}$

7. $\frac{2}{5} \times 6 = \underline{\frac{12}{5}, \text{ or } 2\frac{2}{5}}$

8. $9 \times \frac{2}{3} = \underline{6}$

9. $\frac{3}{10} \times 9 = \underline{\frac{27}{10}, \text{ or } 2\frac{7}{10}}$

10. $4 \times \frac{3}{8} = \underline{\frac{3}{2}, \text{ or } 1\frac{1}{2}}$

11. $\frac{3}{5} \times 7 = \underline{\frac{21}{5}, \text{ or } 4\frac{1}{5}}$

12. $\frac{1}{8} \times 6 = \underline{\frac{3}{4}}$

Problem Solving

13. Leah makes aprons to sell at a craft fair. She needs $\frac{3}{4}$ yard of material to make each apron. How much material does Leah need to make 6 aprons?

 $4\frac{1}{2}$ yards

14. The gas tank of Mr. Tanaka's car holds 15 gallons of gas. He used $\frac{2}{3}$ of a tank of gas last week. How many gallons of gas did Mr. Tanaka use?

10 gallons

Lesson Check (5.NF.4a)

1. At the movies, Liz eats $\frac{1}{4}$ of a box of popcorn. Her friend Kyra eats two times as much popcorn as Liz eats. How much of a box of popcorn does Kyra eat?
2. It takes Ed 45 minutes to complete his science homework. It takes him $\frac{2}{3}$ as long to complete his math homework. How long does it take Ed to complete his math homework?

$\frac{1}{2}$ box

30 minutes

Spiral Review (5.NBT.2, 5.NBT.7, 5.NF.1, 5.NF.2)

3. What is the best estimate for the quotient?
 $591.3 \div 29$
4. Sandy bought $\frac{3}{4}$ yard of red ribbon and $\frac{2}{3}$ yard of white ribbon to make some hair bows. Altogether, how many yards of ribbon did she buy?

about 20

$1\frac{5}{12}$ yards

5. Eric jogged $3\frac{1}{4}$ miles on Monday, $5\frac{5}{8}$ miles on Tuesday, and 8 miles on Wednesday. Suppose he continues the pattern for the remainder of the week. How far will Eric jog on Friday?
6. Sharon bought 25 pounds of ground beef and made 100 hamburger patties of equal weight. What is the weight of each hamburger patty?

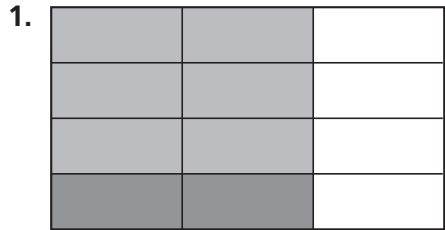
$12\frac{3}{4}$ miles

0.25 pound

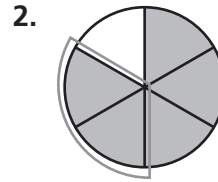
Name _____

Multiply Fractions**COMMON CORE STANDARD—5.NF.4b**
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Find the product.



$$\frac{1}{4} \times \frac{2}{3} = \underline{\frac{2}{12}, \text{ or } \frac{1}{6}}$$



$$\frac{2}{5} \times \frac{5}{6} = \underline{\frac{2}{6}, \text{ or } \frac{1}{3}}$$

Find the product. Draw a model.

Check students' models.

3. $\frac{4}{5} \times \frac{1}{2} = \underline{\frac{4}{10}, \text{ or } \frac{2}{5}}$

4. $\frac{3}{4} \times \frac{1}{3} = \underline{\frac{3}{12}, \text{ or } \frac{1}{4}}$

5. $\frac{3}{8} \times \frac{2}{3} = \underline{\frac{6}{24}, \text{ or } \frac{1}{4}}$

6. $\frac{3}{5} \times \frac{3}{5} = \underline{\frac{9}{25}}$

Problem Solving

7. Nora has a piece of ribbon that is $\frac{3}{4}$ yard long. She will use $\frac{1}{2}$ of it to make a bow. What length of the ribbon will she use for the bow?

$\underline{\frac{3}{8} \text{ yard}}$

8. Marlon bought $\frac{7}{8}$ pound of turkey at the deli. He used $\frac{2}{3}$ of it to make sandwiches for lunch. How much of the turkey did Marlon use for sandwiches?

$\underline{\frac{7}{12} \text{ pound}}$

Lesson Check (5.NF.4b)

1. Tina has $\frac{3}{5}$ pound of rice. She will use $\frac{2}{3}$ of it to make fried rice for her family. How much rice will Tina use to make fried rice?
2. The Waterfall Trail is $\frac{3}{4}$ mile long. At $\frac{1}{6}$ of the distance from the trailhead, there is a lookout. In miles, how far is the lookout from the trailhead?

$\frac{2}{5}$ pound

$\frac{1}{8}$ mile

Spiral Review (5.OA.1, 5.NF.1, 5.NF.2, 5.NF.4a)

3. Hayden bought 48 new trading cards. Three-fourths of the new cards are baseball cards. How many baseball cards did Hayden buy?
4. Yesterday, Annie walked $\frac{9}{10}$ mile to her friend's house. Together, they walked $\frac{1}{3}$ mile to the library. Which is the best estimate for how far Annie walked yesterday?

36 baseball cards

about $1\frac{1}{2}$ miles

5. Erin is going to sew a jacket and a skirt. She needs $2\frac{3}{4}$ yards of material for the jacket and $1\frac{1}{2}$ yards of material for the skirt. Altogether, how many yards of material does Erin need?
6. Simplify the following expression.

$$[(3 \times 6) + (5 \times 2)] \div 7$$

$4\frac{1}{4}$ yards

4

Name _____

Compare Fraction Factors and Products**COMMON CORE STANDARDS—5.NF.5a, 5.NF.5b** Apply and extend previous understandings of multiplication and division to multiply and divide fractions.Complete the statement with *equal to*, *greater than*, or *less than*.

1. $\frac{3}{5} \times \frac{4}{7}$ will be **less than** $\frac{4}{7}$.

2. $5 \times \frac{7}{8}$ will be **greater than** $\frac{7}{8}$.

Think: $\frac{4}{7}$ is multiplied by a number less than 1;
so, $\frac{3}{5} \times \frac{4}{7}$ will be less than $\frac{4}{7}$.

3. $6 \times \frac{2}{5}$ will be **greater than** $\frac{2}{5}$.

4. $\frac{1}{9} \times 1$ will be **equal to** $\frac{1}{9}$.

5. $\frac{7}{8} \times \frac{3}{5}$ will be **less than** $\frac{3}{5}$.

6. $\frac{4}{5} \times \frac{7}{7}$ will be **equal to** $\frac{4}{5}$.

Problem Solving

7. Starla is making hot cocoa. She plans to multiply the recipe by 4 to make enough hot cocoa for the whole class. If the recipe calls for $\frac{1}{2}$ teaspoon vanilla extract, will she need more than $\frac{1}{2}$ teaspoon or less than $\frac{1}{2}$ teaspoon of vanilla extract to make all the hot cocoa?
8. Miles is planning to spend $\frac{2}{3}$ as many hours bicycling this week as he did last week. Is Miles going to spend more hours or fewer hours bicycling this week than last week?

**more than $\frac{1}{2}$ teaspoon
vanilla extract**

fewer hours

Lesson Check (5.NF.5a, 5.NF.5b)

1. Trevor saves $\frac{2}{3}$ of the money he earns at his after-school job. Suppose Trevor starts saving $\frac{1}{4}$ as much as he is saving now. Will he be saving less, more, or the same amount?
2. Suppose you multiply a whole number greater than 1 by the fraction $\frac{3}{5}$. Will the product be greater than, less than, or equal to $\frac{3}{5}$?

He will be saving less.

The product will be greater than $\frac{3}{5}$.

Spiral Review (5.NBT.6, 5.NBT.7, 5.NF.1)

3. In the next 10 months, Colin wants to save \$900 for his vacation. He plans to save \$75 each of the first 8 months. How much must he save each of the last 2 months in order to meet his goal if he saves the same amount each month?
4. What is the total cost of 0.5 pound of peaches selling for \$0.80 per pound and 0.7 pound of oranges selling for \$0.90 per pound?

\$150

\$1.03

5. Megan hiked 15.12 miles in 6.3 hours. If Megan hiked the same number of miles each hour, how many miles did she hike each hour?
6. It is $42\frac{1}{2}$ miles from Eaton to Baxter, and $37\frac{4}{5}$ miles from Baxter to Wellington. How far is it from Eaton to Wellington, if you go by way of Baxter?

2.4 miles

$80\frac{3}{10}$ miles

Name _____

Fraction Multiplication



COMMON CORE STANDARD—5NF.4a
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Find the product. Write the product in simplest form.

$$1. \frac{4}{5} \times \frac{7}{8} = \frac{4 \times 7}{5 \times 8}$$

$$= \frac{28}{40}$$

$$= \frac{7}{10}$$

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

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

$$3. \frac{5}{9} \times \frac{3}{4}$$

$$\frac{5}{12}$$

$$4. \frac{4}{7} \times \frac{1}{2}$$

$$\frac{2}{7}$$

$$5. \frac{1}{8} \times 20$$

$$\frac{5}{2}, \text{ or } 2\frac{1}{2}$$

$$6. \frac{4}{5} \times \frac{3}{8}$$

$$\frac{3}{10}$$

$$7. \frac{6}{7} \times \frac{7}{9}$$

$$\frac{2}{3}$$

$$8. 8 \times \frac{1}{9}$$

$$\frac{8}{9}$$

$$9. \frac{1}{14} \times 28$$

$$2$$

$$10. \frac{3}{4} \times \frac{1}{3}$$

$$\frac{1}{4}$$

11. Karen raked $\frac{3}{5}$ of the yard. Minni raked $\frac{1}{3}$ of the amount Karen raked. How much of the yard did Minni rake?

$$\frac{1}{5} \text{ of the yard}$$

12. In the pet show, $\frac{3}{8}$ of the pets are dogs. Of the dogs, $\frac{2}{3}$ have long hair. What fraction of the pets are dogs with long hair?

$$\frac{1}{4} \text{ of the pets}$$

Algebra Evaluate for the given value of the variable.

$$13. \frac{7}{8} \times c \text{ for } c = 8$$

$$7$$

$$14. t \times \frac{3}{4} \text{ for } t = \frac{8}{9}$$

$$\frac{2}{3}$$

$$15. \frac{1}{2} \times s \text{ for } s = \frac{3}{10}$$

$$\frac{3}{20}$$

$$16. y \times 6 \text{ for } y = \frac{2}{3}$$

$$4$$

Problem Solving

17. Jason ran $\frac{5}{7}$ of the distance around the school track. Sara ran $\frac{4}{5}$ of Jason's distance. What fraction of the total distance around the track did Sara run?

$$\frac{4}{7}$$

18. A group of students attend a math club. Half of the students are boys and $\frac{4}{9}$ of the boys have brown eyes. What fraction of the group are boys with brown eyes?

$$\frac{2}{9}$$

Lesson Check (5.NF.4a)

1. Fritz attended band practice for $\frac{5}{6}$ hour. Then he went home and practiced for $\frac{2}{5}$ as long as band practice. How many minutes did he practice at home?
2. Darlene read $\frac{5}{8}$ of a 56-page book. How many pages did Darlene read?

20 minutes

35 pages

Spiral Review (5.NBT.2, 5.NF.1, 5.NF.3, 5.NF.4a)

3. What is the quotient of $\frac{18}{1,000}$?
4. A machine produces 1,000 bowling pins per hour, each valued at \$8.37. What is the total value of the pins produced in 1 hour?

0.018

\$8,370.00

5. Keith had $8\frac{1}{2}$ cups of flour. He used $5\frac{2}{3}$ cups to make bread. How many cups of flour does Keith have left?
6. The Blue Lake Trail is $11\frac{3}{8}$ miles long. Gemma has hiked $2\frac{1}{2}$ miles each hour for 3 hours. How far is she from the end of the trail?

$2\frac{5}{6}$ cups

$3\frac{7}{8}$ miles

Name _____

Area and Mixed Numbers

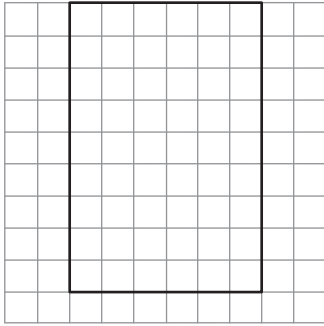


COMMON CORE STANDARD—5.NF.4b
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Use the grid to find the area.

1. Let each square represent $\frac{1}{4}$ unit by $\frac{1}{4}$ unit.

$$2\frac{1}{4} \times 1\frac{1}{2} = \underline{3\frac{3}{8}}$$



54 squares cover the diagram.

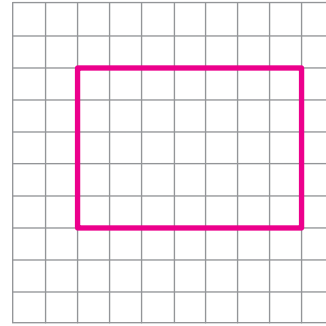
Each square is $\frac{1}{16}$ square unit.

The area of the diagram is

$$\underline{54 \times \frac{1}{16} = \frac{54}{16} = 3\frac{3}{8}} \text{ square units.}$$

2. Let each square represent $\frac{1}{3}$ unit by $\frac{1}{3}$ unit.

$$1\frac{2}{3} \times 2\frac{1}{3} = \underline{3\frac{8}{9}}$$



The area is $\underline{3\frac{8}{9}}$ square units.

Use an area model to solve.

3. $1\frac{1}{8} \times 2\frac{1}{2}$

4. $2\frac{2}{3} \times 1\frac{1}{3}$

5. $1\frac{3}{4} \times 2\frac{1}{2}$

2 $\frac{13}{16}$

3 $\frac{5}{9}$

4 $\frac{3}{8}$

Problem Solving



6. Ava's bedroom rug is $2\frac{3}{4}$ feet long and $2\frac{1}{2}$ feet wide. What is the area of the rug?

6 $\frac{7}{8}$ square feet

7. A painting is $2\frac{2}{3}$ feet long and $1\frac{1}{2}$ feet high. What is the area of the painting?

4 square feet

Lesson Check (5.NF.4b)

1. The base of a fountain is rectangular. Its dimensions are $1\frac{2}{3}$ feet by $2\frac{2}{3}$ feet. What is the area of the base of the fountain?
2. Bill's living room floor is covered with carpet tiles. Each tile is $1\frac{1}{2}$ feet long by $2\frac{3}{5}$ feet wide. What is the area of one tile?

$4\frac{4}{9}$ square feet

$3\frac{9}{10}$ square feet

Spiral Review (5.OA.2, 5.NBT.5, 5.NBT.6, 5.NF.4a)

3. Lucy earned \$18 babysitting on Friday and \$20 babysitting on Saturday. On Sunday, she spent half of the money. Write an expression to match the words.
4. A grocery store clerk is putting cans of soup on the shelves. She has 12 boxes, which each contain 24 cans of soup. Altogether, how many cans of soup will the clerk put on the shelves?

**$(\$18 + \$20) \div 2$ or
 $(\$18 + \$20) \times \frac{1}{2}$**

288 cans of soup

5. What is the best estimate for the quotient $5,397 \div 62$?
6. There are 45 vehicles in a parking lot. Three fifths of the vehicles are minivans. How many of the vehicles in the parking lot are minivans?

90

27 vehicles

Name _____

Compare Mixed Number Factors and Products**COMMON CORE STANDARDS—5.NF.5a, 5.NF.5b** Apply and extend previous understandings of multiplication and division to multiply and divide fractions.Complete the statement with *equal to*, *greater than*, or *less than*.

1. $\frac{2}{3} \times 1\frac{5}{8}$ will be **less than** $1\frac{5}{8}$.

2. $\frac{5}{5} \times 2\frac{3}{4}$ will be **equal to** $2\frac{3}{4}$.

Think: $1 \times 1\frac{5}{8}$ is $1\frac{5}{8}$.Since $\frac{2}{3}$ is less than 1,
 $\frac{2}{3} \times 1\frac{5}{8}$ will be less than $1\frac{5}{8}$.

3. $3 \times 3\frac{2}{7}$ will be **greater than** $3\frac{2}{7}$.

4. $9 \times 1\frac{4}{5}$ will be **greater than** $1\frac{4}{5}$.

5. $1\frac{7}{8} \times 2\frac{3}{8}$ will be **greater than** $2\frac{3}{8}$.

6. $3\frac{4}{9} \times \frac{5}{9}$ will be **less than** $3\frac{4}{9}$.

Problem Solving

7. Fraser is making a scale drawing of a dog house. The dimensions of the drawing will be $\frac{1}{8}$ of the dimensions of the actual doghouse. The height of the actual doghouse is $36\frac{3}{4}$ inches. Will the dimensions of Fraser's drawing be equal to, greater than, or less than the dimensions of the actual dog house?

less than

8. Jorge has a recipe that calls for $2\frac{1}{3}$ cups of flour. He plans to make $1\frac{1}{2}$ times the recipe. Will the amount of flour Jorge needs be equal to, greater than, or less than the amount of flour his recipe calls for?

greater than

Lesson Check (5.NF.5a, 5.NF.5b)

1. Jenna skis $2\frac{1}{3}$ miles down the mountain. Her instructor skis $1\frac{1}{2}$ times as far. Does Jenna ski a shorter, greater, or the same distance as her instructor?
2. Suppose you multiply a fraction less than 1 by the mixed number $2\frac{3}{4}$. Will the product be less than, greater than, or equal to $2\frac{3}{4}$?

Jenna skis a shorter distance than her instructor skis.

The product will be less than $2\frac{3}{4}$.

Spiral Review (NBT.2, 5.NBT.7, 5.NF.1)

3. Rectangular Washington County measures 15.9 miles by 9.1 miles. What is the county's area?
4. Marsha jogged 7.8 miles. Erica jogged 0.5 times as far. How far did Erica jog?

144.69 square miles

3.9 miles

5. One bread recipe calls for $2\frac{1}{3}$ cups of flour. Another bread recipe calls for $2\frac{1}{2}$ cups of flour. Tim has 5 cups of flour. If he makes both recipes, how much flour will he have left over?
6. On Monday, it rained $1\frac{1}{4}$ inches. On Tuesday, it rained $\frac{3}{5}$ inch. How much more did it rain on Monday than on Tuesday?

$\frac{1}{6}$ cup

$\frac{13}{20}$ inch

Name _____

Multiply Mixed Numbers**COMMON CORE STANDARD—5.NF.6**
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Find the product. Write the product in simplest form.

$$1. \quad 1\frac{2}{3} \times 4\frac{2}{5}$$

$$1\frac{2}{3} \times 4\frac{2}{5} = \frac{5}{3} \times \frac{22}{5}$$

$$= \frac{110}{15} = \frac{22}{3}$$

$$= 7\frac{1}{3}$$

2. $1\frac{1}{7} \times 1\frac{3}{4}$

3. $8\frac{1}{3} \times \frac{3}{5}$

4. $2\frac{5}{8} \times 1\frac{2}{3}$

25 $\frac{35}{8}$, or $4\frac{3}{8}$

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

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

7. $\frac{2}{3} \times 4\frac{1}{5}$

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

 $\frac{55}{3}$, or $18\frac{1}{3}$ $\frac{78}{5}$, or $15\frac{3}{5}$ $\frac{14}{5}$, or $2\frac{4}{5}$ 3

Use the Distributive Property to find the product.

9. $4\frac{2}{5} \times 10$

10. $26 \times 2\frac{1}{2}$

11. $6 \times 3\frac{2}{3}$

446522**Problem Solving**

12. Jake can carry $6\frac{1}{4}$ pounds of wood in from the barn. His father can carry $1\frac{5}{7}$ times as much as Jake. How many pounds can Jake's father carry?

 $10\frac{5}{7}$ pounds

13. A glass can hold $3\frac{1}{3}$ cups of water. A bowl can hold $2\frac{3}{5}$ times the amount in the glass. How many cups can a bowl hold?

 $8\frac{2}{3}$ cups

Lesson Check (5.NF.6)

1. A vet weighs two puppies. The small puppy weighs $4\frac{1}{2}$ pounds. The large puppy weighs $4\frac{2}{3}$ times as much as the small puppy. How much does the large puppy weigh?
2. Becky lives $5\frac{5}{8}$ miles from school. Steve lives $1\frac{5}{9}$ times as far from school as Becky. How far does Steve live from school?

21 pounds

$8\frac{3}{4}$ miles

Spiral Review (5.OA.2, 5.NBT.6, 5.NF.1, 5.NF.2)

3. Craig scored 12 points in a game. Marla scored twice as many points as Craig but 5 fewer points than Nelson scored. Write an expression to represent how many points Nelson scored.
4. Yvette earned \$66.00 for 8 hours of work. Lizbeth earned \$68.80 working the same amount of time. How much more per hour did Lizbeth earn than Yvette?

$2 \times 12 + 5$

\$0.35

5. What is the least common denominator of the four fractions listed below?
 $20\frac{7}{10}$ $20\frac{3}{4}$ $18\frac{9}{10}$ $20\frac{18}{25}$
6. Three girls collected geodes in the desert. Corinne collected $11\frac{1}{8}$ pounds, Ellen collected $4\frac{5}{8}$ pounds, and Leonda collected $3\frac{3}{4}$ pounds. How much more did Corinne collect than the other two girls combined?

100

$2\frac{3}{4}$ pounds

Name _____

Problem Solving • Find Unknown Lengths



COMMON CORE STANDARD—5.NF.5b
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

1. Kamal's bedroom has an area of 120 square feet. The width of the room is $\frac{5}{6}$ the length of the room. What are the dimensions of Kamal's bedroom?

Guess: $6 \times 20 = 120$

Check: $\frac{5}{6} \times 20 = 16\frac{2}{3}$; try a longer width.

Guess: $10 \times 12 = 120$

Check: $\frac{5}{6} \times 12 = 10$. Correct!

10 feet by 12 feet

2. Marisol is painting on a piece of canvas that has an area of 180 square inches. The length of the painting is $1\frac{1}{4}$ times the width. What are the dimensions of the painting?

12 inches by 15 inches

3. A small plane is flying a banner in the shape of a rectangle. The area of the banner is 144 square feet. The width of the banner is $\frac{1}{4}$ the length of the banner. What are the dimensions of the banner?

6 feet by 24 feet

4. An artificial lake is in the shape of a rectangle and has an area of $\frac{9}{20}$ square mile. The width of the lake is $\frac{1}{5}$ the length of the lake. What are the dimensions of the lake?

$\frac{3}{10}$ mile by $1\frac{1}{2}$ miles

Lesson Check (5.NF.5b)

1. Consuelo's living room is in the shape of a rectangle and has an area of 360 square feet. The width of the living room is $\frac{5}{8}$ its length. What is the length of the living room?
2. A rectangular park has an area of $\frac{2}{3}$ square mile. The length of the park is $2\frac{2}{3}$ the width of the park. What is the width of the park?

24 feet

$\frac{1}{2}$ mile

Spiral Review (5.NBT.4, 5.NF.1, 5.NF.4a, 5.NF.5a, 5.NF.5b)

3. Debra babysits for $3\frac{1}{2}$ hours on Friday and $1\frac{1}{2}$ times as long on Saturday. Did Debra babysit more, fewer, or the same number of hours on Saturday than she did on Friday?
4. Tory practiced her basketball shots for $\frac{2}{3}$ hour. Tim practiced his basketball shots for $\frac{3}{4}$ as much time as Tory did. How long did Tim practice his basketball shots?

Debra babysat more hours on Saturday than on Friday.

$\frac{1}{2}$ hour

5. Leah bought $4\frac{1}{2}$ pounds of grapes. Of the grapes she bought, $1\frac{7}{8}$ pounds were red grapes. The rest were green grapes. How many pounds of green grapes did Leah buy?
6. To which place value is the following number rounded?
5.927 to 5.93

$2\frac{5}{8}$ pounds

hundredths