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\*Answers and/or discussion are included in the lesson.

Student Guide

### Workshop: Multiply and Divide Fractions (SG pp. 515–516) Ouestions 1–4

- 1. Possible response: Fern did not need to find common denominators. She could have just multiplied the numerators and multiplied the denominators.
- **2.** A.  $\frac{1}{3} \times \frac{3}{4} = \frac{3}{12}$ .



- **B.**  $\frac{3}{12} = \frac{1}{4}$ ; Possible response: I know my answer is in simplest form because I used the fewest yellow circle pieces. 3 black twelfths was not the simplest form because I used 3 pieces. I could trade them for 1 yellow.
- **3. A.** Possible response: The quotient for  $5 \div \frac{1}{3}$  should be greater than 5. I think a lot of thirds will be in 5.
  - **B.**  $5 \div \frac{1}{3} = 15$ ; Drawings will vary. Sample drawing:



- **C.** My quotient, 15, is greater than 5 so it is reasonable. I expected a lot of thirds to be in 5.
- **4.**  $\frac{1}{4} \div 3 = \frac{1}{12}$  bag of beads for each child; Possible solution:



#### Student Activity Book

## Find Fraction Products and Quotient (SAB pp. 425–440) Questions 1–30

- I. A. greater than 1
  - **B.** less than 1
  - C. less than 1
  - **D.** greater than 1
  - **E.** less than 1
  - **F.** less than  $\frac{1}{2}$
  - **G.**  $\frac{1}{2} \times 3$
- **2. A.** greater than 1
  - **B.** greater than 1
  - **C.** less than 1
  - **D.** less than 1
  - **E.** less than  $\frac{1}{2}$
  - **F.** less than  $\frac{1}{2}$
  - **G.**  $6 \div \frac{1}{2}$
- **3. A.** greater than 1
  - **B.** less than 1
  - **C.** greater than 1
  - **D.** less than 1
  - E. less than 1
  - F. greater than 1
  - G. less than 1
  - **H.** less than 1
  - **I.** greater than 1
  - **J.** greater than 1

	Working On HI Gatting HI Gat HI			
	Can I Do This?	I could use some extra help.	Getting It!	Got It!
	Represent and solve problems involving multiplication and division of fractions.	★ Q# 1–2, 4–8, 10–16	• Q# 1–3, 9A–D, 15–25	■ Q# 1–3, 9E- 15–30
Fc es	r Questions 1–3, timate.	estimate the proc	luct or quotient.	Circle the best
*	■1. Estimate.			
	<b>A.</b> 2 × 1		less than 1	greater than 1
	<b>B.</b> $\frac{1}{2} \times 1$		less than 1	greater than 1
	C. $\frac{3}{4} \times 3$		less than 1	greater than 1
	<b>D.</b> $\frac{1}{2} \times 3$		less than 1	greater than 1
			less than $\frac{1}{2}$	greater than $\frac{1}{2}$
	<b>E.</b> $\frac{1}{2} \times \frac{1}{2}$			
	<b>E.</b> $\frac{1}{2} \times \frac{1}{2}$ <b>F.</b> $\frac{3}{4} \times \frac{1}{2}$		less than $\frac{1}{2}$	greater than 2
	<b>E.</b> $\frac{1}{2} \times \frac{1}{2}$ <b>F.</b> $\frac{3}{4} \times \frac{1}{2}$ <b>G.</b> Circle which	h is greater?	$\frac{1}{2} \times 3  \text{ or } $	$\frac{1}{2} \times \frac{3}{4}$

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	Dule	
★●■2. Estimate.		
<b>A.</b> 3 ÷ 1	less than 1	greater than 1
<b>B.</b> $3 \div \frac{1}{3}$	less than 1	greater than 1
<b>C.</b> 1 ÷ 3	less than 1	greater than 1
<b>D.</b> $\frac{1}{3} \div 1$	less than 1	greater than 1
<b>E.</b> <sup>1</sup> / <sub>3</sub> ÷ 1	less than $\frac{1}{2}$	greater than $\frac{1}{2}$
<b>F.</b> $\frac{1}{3} \div 3$	less than $\frac{1}{2}$	greater than $\frac{1}{2}$
G. Circle which is greater?	$\frac{1}{2} \div 6$ or	$6 \times \frac{1}{2}$
●■3. Estimate.		
<b>A.</b> $2 \times \frac{3}{5}$	less than 1	greater than 1
<b>B.</b> $\frac{1}{2} \times \frac{3}{4}$	less than 1	greater than 1
<b>C.</b> $\frac{7}{8} \times 2$	less than 1	greater than 1
<b>D.</b> $\frac{4}{5} \times \frac{7}{8}$	less than 1	greater than 1
<b>E.</b> $\frac{1}{2} \times \frac{1}{2}$	less than 1	greater than 1
<b>F.</b> $12 \div \frac{1}{5}$	less than 1	greater than 1
<b>G.</b> $\frac{1}{5}$ ÷ 12	less than 1	greater than 1
<b>H.</b> 1 ÷ 4	less than 1	greater than 1
1. $2 \div \frac{1}{7}$	less than 1	greater than 1
<b>J.</b> $2 \times \frac{3}{2}$	less than 1	greater than 1
		1
100		

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and <i>Men</i> sect	pencil to solve the problems. Refer to the Multiplying Fractions u and the Dividing Fractions Menu in the Student Guide Reference ion.
*4.	There are 4 glasses with $\frac{2}{3}$ -cup juice. How many cups of juice are there altogether?
	$4  imes rac{2}{3}$
	<b>A.</b> Is $4 \times \frac{2}{3}$ greater than or less than $\frac{2}{3}$ ?
	<b>B.</b> Is $4 \times \frac{2}{3}$ greater than or less than 4?
	<b>C.</b> Should the product be closer to $\frac{2}{3}$ or 4?
	<b>D.</b> Use the number line to show $4 \times \frac{2}{3}$ .
è	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
g compa	<b>E.</b> $4 \times \frac{2}{3} = $
unaliany p	Is your answer in simplest form? If not, rewrite it.
pyright © Kendall Hun	F. Does your answer make sense?
ö 	

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eat? A. Is $\frac{2}{3} \times \frac{1}{2}$ greater than or less than $\frac{2}{3}$ ?	
$\frac{2}{3} \times \frac{1}{2}$	
<b>B.</b> Is $\frac{2}{3} \times \frac{1}{2}$ greater than or less than $\frac{1}{2}$ ?	
<b>C.</b> Use the rectangle to show $\frac{2}{3} \times \frac{1}{2}$ .	
<b>D.</b> $\frac{2}{3} \times \frac{1}{2} = $	
Is your answer in simplest form? If not, rewrite it.	Copyright @ P
E. Does your answer make sense?	(endall Hunt
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- **D.**  $\frac{2}{3} \times \frac{1}{2} = \frac{2}{6} = \frac{1}{3}$
- **E.** Answers will vary. Yes, I thought about fraction circle pieces. It takes 2 orange pieces to equal  $\frac{2}{3}$ . So, one orange piece is  $\frac{1}{3}$ .



**F.** Answers will vary. Yes, I know the answer will be a lot bigger than 5 because I need to count the pieces that are  $\frac{1}{4}$  in each whole.

Name	Dote
*6.	4 children want to share 3 sandwiches equally. How much sandwich will each child get? $ \begin{array}{c}                                     $
	A. How will you label your answer?
	B. Is 3 ÷ 4 greater than or less than 1?
	C. Use the picture above to show how to divide 3 sandwiches between 4 children.
	D. 3 ÷ 4 = Is your answer in simplest form? If not, rewrite it.
	E. Does your answer make sense?

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+	
0 ft.	1 ft. 2 ft. 3 ft. 4 ft. 5 ft. $5 \div \frac{1}{4} =$
A.	How will your label your answer?
в.	Is 5 $\div \frac{1}{4}$ greater than or less than 5?
c.	Use the picture above to show how to divide the ribbon into $\frac{1}{4}\mbox{-foot}$ pieces.
D.	5 ÷ $\frac{1}{4}$ = Is your answer in simplest form? If not, rewrite it.
E.	Show how to solve 5 $\pm \frac{1}{4}$ another way. How would you show how many fourths are in 5 wholes with fraction circle pieces? Sketch the pieces below.
F.	Does your answer in Question 7D make sense?

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Name	Date
*8.	There was $\frac{1}{3}$ of a cake leftover. Luis cut it into 4 pieces. How much of the whole cake is each piece?
	$\frac{1}{3} + 4$
	A. How will your label your answer?
	<b>B.</b> Is $\frac{1}{3} \div 4$ greater than or less than 4?
	$\ensuremath{\textbf{C}}$ . Use the picture above to show how to divide the leftover cake by 4.
	<b>D.</b> $\frac{1}{3} \div 4 =$ Is your answer in simplest form? If not, rewrite it.
0	E. Show how to solve $\frac{1}{3}=4$ another way. Use the fraction circle piece below to show how to divide $\frac{1}{3}$ into 4 equal shares .
Copyright © Kendall ruur. r	OB     F. Does your answer in Question 8D make sense?
Work	shop: Multiply and Divide Fractions SAB • Grade S • Unit 10 • Lesson 11

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	<b>H</b> . 5 ÷ $\frac{1}{6}$ =	
	<b>G.</b> $\frac{1}{8} \div 6 =$	ng Company
	<b>F.</b> $\frac{2}{3} \times \frac{5}{8} =$	9ndall Hunt Publishi
	<b>E</b> . $5 \times \frac{4}{5} =$	Copyright © Ku
	• <b>D.</b> $\frac{1}{3} \div 4 =$	
	• <b>C.</b> $3 + \frac{1}{4} =$	
	• <b>B.</b> $\frac{2}{5} \times \frac{3}{4} =$	
	• <b>A</b> $4 \times \frac{3}{4} =$	
9.	Represent each of the following problems with rectangles, fraction circle pieces, number lines, drawings, or stories. Show your solution by completing the number sentence. Write your answer in simplest form.	

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**8. A.** cake





- **F.** Answers will vary. Yes, because I am dividing a fraction into 4 shares so each share is going to be small.
- **9.** Representations will vary. Sample representations are given for each question.



**D.** 
$$\frac{1}{3} \div 4 = \frac{1}{12}$$



F.  $\frac{2}{3} \times \frac{5}{8} = \frac{10}{24} = \frac{5}{12}$ paper and pencil:  $\frac{2 \times 5}{3 \times 8} = \frac{10}{24} = \frac{5}{12}$ G.  $\frac{1}{3} \div 6 = \frac{1}{32}$ 

**H.** 
$$5 \div \frac{1}{6} = 30$$



- **10.**  $10 \times \frac{1}{12} = \frac{10}{12} = \frac{5}{6}$  of an hour
- **II.**  $\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$  of a cup of sugar
- **12.**  $5 \div \frac{1}{2} = 10$  friends
- **I3. A.** 12 scoops
  - **B.** 15 scoops
  - **C.** 20 scoops
- **14.** A. Each slice is  $\frac{1}{4}$  of the whole cake.
  - **B.** Each slice is  $\frac{1}{8}$  of the whole cake.
  - **C.** Each slice is  $\frac{1}{16}$  of the whole cake.

Solve	the word problems in Questions 10–30. Use rectangles, fraction circle pieces, drawings, number lines, or paper and pencil to solve. Include number sentences and labels when needed. Write your answers in simplest form. Refer to the Multiplying Fractions Menu and Dividing Fractions Menu in the Student Guide Reference section.
*10.	It takes Mrs. Murphy $^1_{12}$ of an hour to decorate each sugar cookie. How long will it take to decorate 10 cookies?
	Number sentence
*11.	Mrs. Murphy wants to make half of a recipe of cookies. If a whole recipe calls for $\frac{3}{4}$ cup sugar, how much sugar will she need for half the recipe?
	Number sentence
*12.	Johnny buys 5 cookies at the bakery to share with his friends. If every frien gets $\frac{1}{2}$ of a cookie, how many friends can have cookies?

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*13. Mrs. Murphy wants to know how many scoops of chocolate chips are stored in each container.		*14. Mrs. Murphy is cutting slices of cake. Tell how much of the whole cake ea slice will be.
<b>A.</b> How many $\frac{1}{4}$ -cup scoops are in 3 containers? Draw a picture to solve $3 + \frac{1}{4}$ .		A. How can she cut $\frac{1}{2}$ of a cake into 2 equal parts? Draw a picture to solve $\frac{1}{2} \div 2.$
scoops <b>B.</b> How many $\frac{1}{3}$ -cup scoops are in 5 containers? Draw a picture to solve 5 + $\frac{1}{3}$ .		Each slice is of the whole cake. <b>B.</b> How can she cut $\frac{1}{2}$ of a cake into 4 equal parts? Draw a picture to solve $\frac{1}{2} + 4$ .
scoops <b>C.</b> How many $\frac{1}{5}$ -cup scoops are in 4 containers? Draw a picture to solve $4 + \frac{1}{5}$ .	Copyright © Kendali Hunt Publishing Co	Each slice is of the whole cake. <b>C.</b> How can she cut $\frac{1}{2}$ of a cake into 8 equal parts? Draw a picture to solve $\frac{1}{2} + 8$ .
scoops	nnaany	Each slice is of the whole cake.

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/	
✓ Cł	neck-In: Questions 15-16
*●■15.	Mrs. Murphy wants to cut $\frac{1}{3}$ of a pan of brownies into 3 pieces. How much of the pan is each piece?
	A. Represent the problem with a drawing, fraction circle pieces, rectangle, or a number line.
	B. Number sentence
*●■16.	There was $\frac{4}{5}$ of a bag of flour in the bakery. Mrs. Murphy used $\frac{2}{5}$ of it to make batches of brownies. How much of the whole bag of flour did she use to make brownies? <b>A</b> . Show how you solve the problem.
●■17.	B. Number sentenceA. How many half hours are in 5 hours?
	$5 \div \frac{1}{2} = $ and $\times \frac{1}{2} = 5$
	B. How many half hours are in 10 hours?
	$10 \div \frac{1}{2} = \_$ and $\_$ $\times \frac{1}{2} = 10$
	C. How many quarter hours are in 5 hours?
	$5 \div \frac{1}{4} = $ and $\times \frac{1}{4} = 5$
	D. How many quarter hours are in 10 hours?
	$10 \div \frac{1}{4} = \_\_\_ and \_\_\_ \times \frac{1}{4} = 10$

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•=18	A. How many $\frac{1}{2}$ miles are in 14 miles?
	B. How many $\frac{1}{4}$ pies are in 12 pies?
	C. How many $\frac{1}{3}$ cups are in 9 cups?
	D. How many one-fifths are in 8 wholes?
●■19.	Keenya spends $\frac{2}{3}$ hour practicing her violin each day. How many hours v she practice in one week?
	Number sentence
●■20.	Romesh skates $\frac{3}{4}$ mile in $\frac{1}{4}$ hour.
	A. How far can he skate in 1 hour?
	B. How far can he skate in 3 hours?
●∎21.	Josh has 4 pies. He is going to share the pies with his classmates. There exactly enough to give each person $\frac{1}{6}$ of the pie. How many people are in his class?
	Number sentence
●■22.	Fern is hanging 5 block party posters on her city block. Her block is $\frac{1}{8}m$ long. How far apart should she hang the posters so that they are evenly spaced?
	Number sentence



- \*Answers and/or discussion are included in the lesson.
- 7 TG · Grade 5 · Unit 10 · Lesson 11 · Answer Key

**15. A.**\* Representations will vary. Sample representation:



See Figure 4 in Lesson for more representations.

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

**16. A.\*** Solution strategies will vary. Possible solution:



- **B.**\*  $\frac{3}{4} \times \frac{4}{5} = \frac{12}{20} = \frac{3}{5}$  bag of flour **I7. A.**  $5 \div \frac{1}{2} = \underline{10}$  and  $\underline{10} \times \frac{1}{2} = 5$  **B.**  $10 \div \frac{1}{2} = \underline{20}$  and  $\underline{20} \times \frac{1}{2} = 10$  **C.**  $5 \div \frac{1}{4} = \underline{20}$  and  $\underline{20} \times \frac{1}{4} = 5$ **D.**  $10 \div \frac{1}{4} = \underline{40}$  and  $\underline{40} \times \frac{1}{4} = 10$
- **18. A.** 7 half-miles
  - **B.** 48  $\frac{1}{4}$  -pies
  - **C.** 27  $\frac{1}{3}$  -cups
  - **D.** 40 one-fifths
- **19.**  $4\frac{2}{3}$  hours;  $\frac{2}{3} \times 7 = \frac{14}{3} = 4\frac{2}{3}$
- **20. A.** 3 miles
- **B.** 9 miles **21.**  $4 \div \frac{1}{6} = 24$  people
- **22.**  $\frac{1}{8} \div 5 = \frac{1}{40}$  mile

Name

23. A.  $\frac{4}{5} \times \frac{1}{8} = \frac{4}{40} = \frac{1}{10}$  of the wall B.  $\frac{4}{5} \times \frac{2}{5} = \frac{8}{25}$  of the wall C.  $\frac{4}{5} \times \frac{3}{10} = \frac{12}{50} = \frac{6}{25}$  of the wall 24.  $\frac{1}{5} \div 3 = \frac{1}{15}$  of the pan 25.  $9 \times \frac{1}{3} = \frac{9}{3} = \$3.00$ 26. A.  $\frac{1}{3} \div 6 = \frac{1}{18}$  of a pound B.  $\frac{2}{3} \div 6 = \frac{1}{9}$  of a pound 27. A.  $3 \div \frac{1}{3} = 9$  patties B. About 4–5 patties 28. A.  $5 \div \frac{1}{5} = 25$  people B. About 12–13 people 29.  $\frac{3}{5} \times \frac{7}{8} = \frac{21}{40}$  yard 30. A.  $\frac{1}{2} \div \frac{1}{2} = 1$  big bow B.  $\frac{1}{2} \div \frac{1}{4} = 2$  medium bows

**C.**  $\frac{1}{2} \div \frac{1}{10} = 5$  small bows

■23.	An artist wants to tile $\frac{2}{5}$ of a wall. He will leave the rest of the wall untiled so he can paint on it. He wants $\frac{1}{5}$ of the tile to be blue, $\frac{2}{5}$ of the tile to be yellow, and $\frac{2}{6}$ of the tile to be green.
	A. How much of the whole wall will be tiled with blue?
	Number sentence
	B. How much of the whole wall will be tiled with yellow?
	Number sentence
	C. How much of the whole wall will be tiled with green?
	Number sentence
■24.	There is $\frac{1}{5}$ of a pan of lasagna. Sam cuts it into 3 equal portions. How much of the pan is each portion?
	Number sentence
■25.	Trail mix costs \$9 per pound. How much will Grace pay for $\frac{1}{3}$ pound?
	Number sentence

Date

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