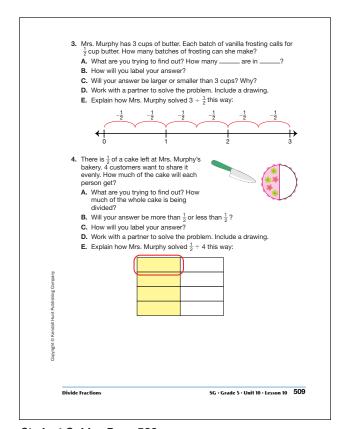


#### Student Guide - Page 508



#### Student Guide - Page 509

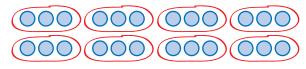
\*Answers and/or discussion are included in the lesson.

#### Student Guide

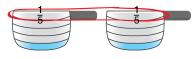
## Divide Fractions (SG pp. 508-513) Questions 1-30

Drawings for Questions 1–16 will vary. Sample drawings are provided.

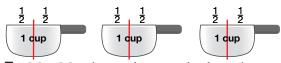
- I. A.\* batches
  - B.\* 8 batches:



- **2. A.\*** less than 1
  - B.\* cups
  - **C.**\*  $\frac{2}{5}$  cups;



- **3. A.\*** How many halves are in 3?
  - B.\* batches
  - C.\* The quotient will be larger than 3 because you are dividing the 3 cups of butter into smaller  $\frac{1}{2}$  cups.
  - D.\* 6 batches:



- E.\* Mrs. Murphy used repeated subtraction on a number line to solve  $3 \div \frac{1}{2}$ . She took 6 backwards jumps of  $\frac{1}{2}$ .
- **4. A.\*** How much of the whole cake will each person get if  $\frac{1}{2}$  of it is divided among 4?
  - **B.\*** less than  $\frac{1}{2}$
  - C.\* cake
  - **D.**\*  $\frac{1}{8}$  cake;

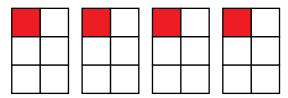


E.\* Mrs. Murphy divided a rectangle in half and then divided the half into four equal pieces. Each person would get  $\frac{1}{8}$  of the whole cake.

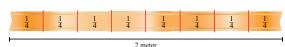




**6.** Each gets  $\frac{4}{6}$  of a box



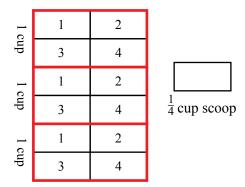
7. 8 pieces



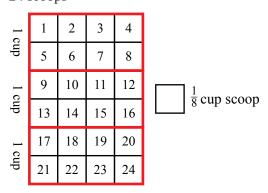
**8.**  $\frac{1}{9}$  of a yard



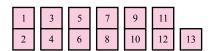
**9.** 12 scoops

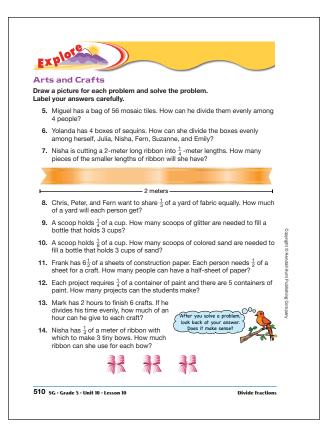


**10.** 24 scoops



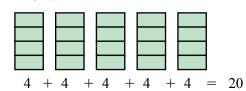
II. 13 people



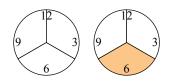


#### Student Guide - Page 510

12. 20 projects



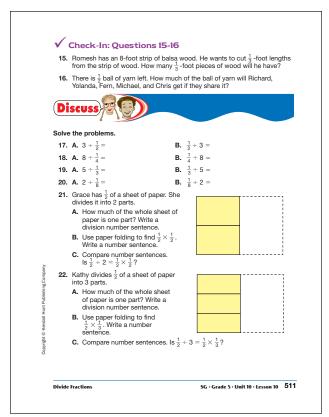
13.  $\frac{1}{3}$  of an hour



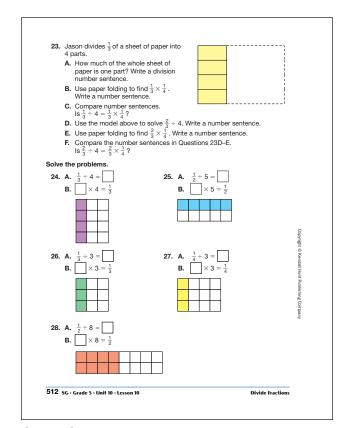
14.  $\frac{1}{12}$  of a meter



# Answer Key • Lesson 10: Divide Fractions



## Student Guide - Page 511



#### Student Guide - Page 512

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

#### 15.\* 24 pieces



**16.**  $\frac{1}{10}$  ball



17. A.\* 
$$3 \div \frac{1}{2} = 6$$

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

**18.** A.\* 
$$8 \div \frac{1}{4} = 32$$
 B.\*  $\frac{1}{4} \div 8 = \frac{1}{32}$ 

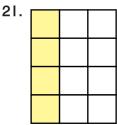
**B.\*** 
$$\frac{1}{4} \div 8 = \frac{1}{32}$$

**19.** A.\* 
$$5 \div \frac{1}{3} = 15$$

**B.\*** 
$$\frac{1}{3} \div 5 = \frac{1}{15}$$

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

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



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

**B.** 
$$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

**C.** Yes, 
$$\frac{1}{2} \div 2 = \frac{1}{2} \times \frac{1}{2}$$
. Both equal  $\frac{1}{4}$ .

**22.** A. 
$$\frac{1}{2} \div 3 = \frac{1}{6}$$
 sheet

**B.** 
$$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$$

**C.** Yes, 
$$\frac{1}{2} \div 3 = \frac{1}{3} \times \frac{1}{2}$$
. Both equal  $\frac{1}{6}$ .

**23.** A.\* 
$$\frac{1}{3} \div 4 = \frac{1}{12}$$
 sheet

**B.\*** 
$$\frac{1}{3} \times \frac{1}{4} = \frac{1}{12}$$

**C.\*** Yes, 
$$\frac{1}{3} \div 4 = \frac{1}{3} \times \frac{1}{4}$$
. Both equal  $\frac{1}{12}$ .

**D.** 
$$\frac{2}{3} \times 4 = \frac{2}{12}$$
 or  $\frac{1}{6}$ 

**E.** 
$$\frac{2}{3} \times \frac{1}{4} = \frac{2}{12}$$
 or  $\frac{1}{6}$ 

**F.** Yes, 
$$\frac{2}{3} \div 4 = \frac{2}{3} \times \frac{1}{4}$$
. Both equal  $\frac{2}{12}$  or  $\frac{1}{6}$ .

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

**24.** A.\* 
$$\frac{1}{3} \div 4 = \frac{1}{12}$$
 **25.** A.\*  $\frac{1}{2} \div 5 = \frac{1}{10}$ 

B.\* 
$$\frac{1}{12} \times 4 = \frac{1}{2}$$

**B.**\* 
$$\frac{1}{12} \times 4 = \frac{1}{3}$$
 **B.**\*  $\frac{1}{10} \times 5 = \frac{1}{2}$  **26. A.**  $\frac{1}{3} \div 3 = \frac{1}{9}$  **27. A.**  $\frac{1}{4} \div 3 = \frac{1}{12}$ 

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

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

**B.** 
$$\frac{1}{9} \times 3 = \frac{1}{3}$$
  
**28. A.**  $\frac{1}{2} \div 8 = \frac{1}{16}$ 

**B.** 
$$\frac{1}{12} \times 3 = \frac{1}{4}$$

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

**B.** 
$$\frac{1}{16} \times 8 = \frac{1}{2}$$

**29. A.** 
$$1 \div \frac{1}{2} = 2$$

**C.** 
$$1 \div \frac{1}{4} = 4$$

**D.** 
$$1 \div \frac{1}{5} = 5$$

**E.** 
$$1 \div \frac{1}{10} = 10$$

D. 
$$1 \div \frac{1}{5} = 5$$
  
E.  $1 \div \frac{1}{10} = 10$   
F.  $1 \div \frac{1}{100} = 100$   
A.  $1 \div 2 = \frac{1}{2}$   
B.  $1 \div 3 = \frac{1}{3}$   
D.  $1 \div \frac{4}{5} = 1$   
 $10 \times \frac{1}{10} = 1$   
 $100 \times \frac{1}{100} = 1$   
 $\frac{1}{2} \times 2 = 1$ 

**30.** A. 
$$1 \div 2 = \frac{1}{2}$$

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

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

**D.** 
$$1 \div 5 = \frac{1}{5}$$

**E.** 
$$1 \div 10 = \frac{1}{10}$$

**F.** 
$$1 \div 100 = \frac{1}{100}$$
  $\frac{1}{100} \times 100 = 1$ 

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

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

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

$$5 \times \frac{1}{5} = 1$$

$$10 \times \frac{1}{10} = 1$$

$$100 \times \frac{1}{100} = 1$$

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

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

$$\frac{1}{2} \times 4 = 1$$

$$\frac{1}{5}$$
 × 5 = 1

$$\frac{1}{10} \times 10 = 1$$

$$\frac{1}{100} \times 100 = 1$$

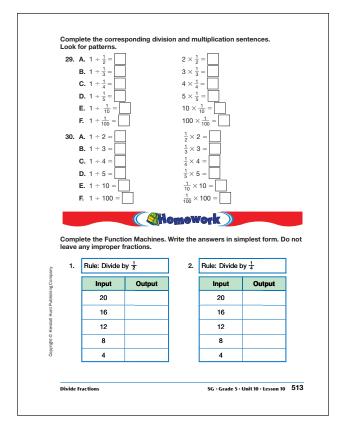
# Homework (SG pp. 513-514) **Ouestions 1-9**



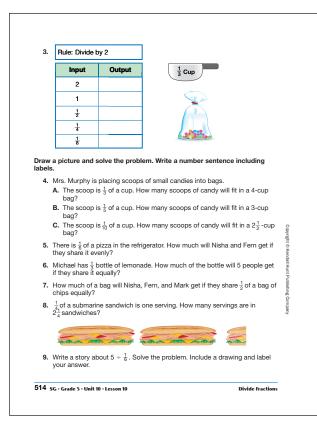
Input	Output
20	10
16	8
12	6
8	4
4	2

**2.** Rule: Divide by  $\frac{1}{4}$ 

Input	Output
20	5
16	4
12	3
8	2
4	1



Student Guide - Page 513



Student Guide - Page 514

2			
ა.	Rule:	Divide	by 2

Input	Output
2	1
1	$\frac{1}{2}$
1/2	$\frac{1}{4}$
1/4	$\frac{1}{8}$
1 8	<u>1</u> 16

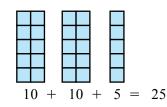
**4. A.** 12 scoops

1	2	3	4	5	6
7	8	9	10	11	12

**B.** 15 scoops

2
5

C. 25 scoops



- **5.** Each girl will get  $\frac{1}{12}$  of a pizza.
- **6.**  $\frac{1}{15}$  bottle
- **7.** Each child will get  $\frac{1}{6}$  bag.
- **8.** 9 servings
- **9.** Stories will vary. Sample story:

Ana had 5 feet of ribbon. She cut it into  $\frac{1}{6}$ - foot lengths. She had 30 smaller ribbons when she was done.



### Student Activity Book

# Fraction Operations (SAB p. 423) **Homework**

Questions 1-5

Rule: Add	<u>1</u>
-----------	----------

Input	Output
3 2	$\frac{4}{2} = 1$
2/3	$\frac{7}{6} = 1\frac{1}{6}$
<del>7</del> 10	$\frac{12}{10} = 1\frac{2}{10} = 1\frac{1}{5}$
1/4	$\frac{3}{4}$
3 <sup>1</sup> / <sub>3</sub>	$3\frac{5}{6}$

2. Rule: Subtract 
$$\frac{1}{2}$$

Input	Output	
<u>7</u> 2	$\frac{6}{2} = 3$	
<u>4</u> 5	$\frac{3}{10}$	
<u>9</u> 10	$\frac{4}{10} = \frac{2}{5}$	
<u>6</u> 7	<u>5</u> 14	
2	$1\frac{1}{2}$	

#### Rule: Multiply by $\frac{1}{2}$

Input	Output
<u>2</u> 3	$\frac{2}{6} = \frac{1}{3}$
1/4	$\frac{1}{8}$
5	$\tfrac{5}{2}=2\tfrac{1}{2}$
1 <del>1</del> /2	$\frac{3}{4}$
38	3 16

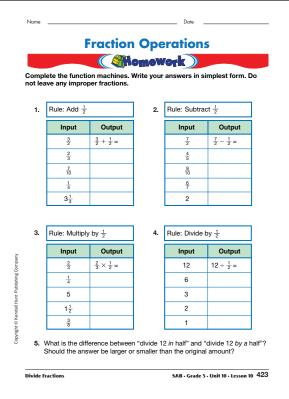
 $12 \div 2 = 6$ . 12 divided by a half is

	٠	
L	•	

Input	Output
12	24
6	12
3	6
2	4
1	2

Rule: Divide by  $\frac{1}{2}$ 

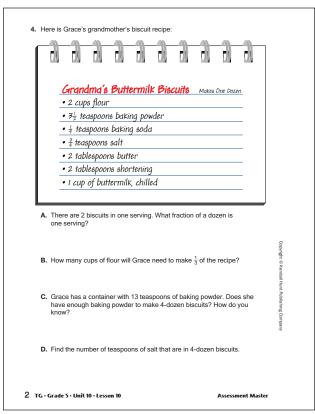
Student Activity Book - Page 423



be greater than the original amount (12.)

**5.** Possible response: 12 divided in half is  $12 \div \frac{1}{2} = 24$ . You are trying to find out how many halves are in 12, so the answer (24) will

## Teacher Guide - Page 1



Teacher Guide - Page 2

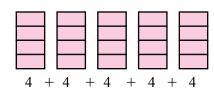
# Multiply and Divide Fractions Quiz (TG p. 1–2) Questions 1–4

I. Solutions strategies will vary. Possible strategies are given.

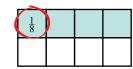
**A.** 
$$3 \times \frac{1}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$$

**B.** 
$$\frac{3}{5} \times \frac{2}{3} = \frac{3 \times 2}{5 \times 3} = \frac{6}{15} = \frac{2}{5}$$

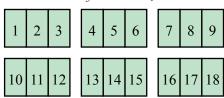
**C.** 
$$5 \div \frac{1}{4} = 20$$



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



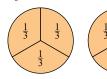
**2. A.** 6 candy bar are divided into thirds. How many pieces are there? There are 18 pieces that are each  $\frac{1}{3}$  of a candy bar.



**B.** The quotient will be more than 6 because you are finding how many thirds are in 6.

**C.** 
$$6 \div \frac{1}{3} = 18$$

3. A.



**B.** The product will be less than 6 because you are putting together 6 small parts each less than one.

**C.** 
$$\frac{1}{3} \times 6 = \frac{6}{3} = 2$$

**4. A.**  $\frac{2}{12}$  or  $\frac{1}{6}$  of a dozen

**B.**  $\frac{2}{3}$  of a cup

**C.** No.  $4 \times 3$  teaspoons is 12. I can estimate that  $4 \times \frac{1}{2}$  teaspoons more will be more than 13 teaspoons.

**D.** 3 teaspoons