Student Guide

Workshop: Add and Subtract Fractions (SG p. 479) Questions 1–5

- I. >1
- **2.** <1
- **3.** >1
- **4.** <1
- **5. A.** $\frac{10}{14}$ or $\frac{5}{7}$; Lee Yah is incorrect.
 - **B.** $1\frac{3}{10}$; Roberto is correct.
 - **C.** $\frac{19}{12} = 1\frac{7}{12}$; Tanya is correct.

			<u> </u>
	Wa Add and S	orkshop: ubtract Fre	actions
diffe thar	Moreno's class played a game. rence of two fractions and then n or less than 1. Students put the r thumbs down to indicate "less	decide whether the e eir thumbs up to indic	exact answer was greater
	Discuss		
diff	e are the problems Mr. Moren erences. Write "> 1" if the answer is less than one. Do not s	wer is greater than o	ne and "<1" if the
1	$\frac{5}{12} + \frac{5}{6} = 2. \frac{4}{10} + \frac{4}{8}$	$=$ 3. $2\frac{7}{10} - 1\frac{2}{4}$	$=$ 4. $1\frac{7}{8} - 1\frac{4}{5} =$
Lux4	this problem: Here are the students' solutio answers and tell whether their correct or incorrect.		NY 5
Use and with	A () + k () + k () + k B. B. the Self-Check Questions and		c. $\frac{3}{4} + \frac{5}{6}$
and with	Differences pages in the Studen adding and subtracting fraction	nt Activity Book to he	
	kshop: Add and Subtract Fractions		ade 5 · Unit 10 · Lesson 6 479

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	sion Facts and Adding and Subtracting Fra le Reference section.	actions Menu in the Student
	Self-Check: Questions 1-2 A. Estimate the sum: $\frac{10}{12} + \frac{3}{4}$.	
	B. Solve $\frac{10}{12} + \frac{3}{4}$ using paper and pencil.	
	C. Check your answer in Question 1B with tell which pieces you use. Is your answer	
2.	A. Estimate the sum: $3\frac{2}{3} + 1\frac{2}{5}$.	
blishing Company	B. Solve $3\frac{2}{3} + 1\frac{2}{5}$ using paper and pencil.	
Jopyright © Kendall Hunt Publishing Company	C. How do you know if your answer in Que	estion 2B is reasonable?
Copyrigi		

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Menu to choose pra- differences.	ng fraction sums ar	nd differences. Use	
	Works	hop Menu	
Can I Do This?	Working On It!	Getting It!	Got It!
Estimate fraction sums and differences.	★ Q# 3A–E, 5A–D, 6	● Q# 3C-G, 4, 5E-I, 6	■ Q# 3F–J, 4, 5G–L, 6
Add and subtract fraction using models and paper and pencil.	★ Q# 7–8, 11–12, 14,	● Q# 8–10, 13A–E,15–17	■ Q# 8–10, 13D–H, 15–17
or Questions 3 and			
ractions, or use oth 3. Label about wh	•	p you estimate.	
ractions, or use oth 3. Label about wh	er strategies to hel ere each of the follo	p you estimate. wing fractions woul	ose to the actual
 ractions, or use oth 3. Label about wh line below. An e 	er strategies to hel ere each of the follo example is given.	p you estimate. wing fractions woul	ose to the actual
xactions, or use oth 3. Label about wh line below. An e ★ A. 4/5 ★● C. 1/8 ★● E. 1/20	er strategies to hel ere each of the follo example is given. * B. $\frac{2}{4}$ *• D. 1 •■ F. 1	p you estimate. wing fractions would a a 4 7	ose to the actual
 actions, or use oth Label about when the below. An example, a second seco	er strategies to hel ere each of the follo example is given. * B. $\frac{2}{4}$ *• D. 1 •■ F. 1	p you estimate. wing fractions woul 3 4 5 7 7 7 7 5000	ose to the actual

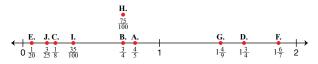


Student Activity Book

Find Fraction Sums and Differences (SAB pp. 409–419) Questions 1–17

- **I. A.** Estimates will vary. Possible response: about $1\frac{1}{2}$
 - **B.** $\frac{19}{12} = 1\frac{7}{12}$
 - **C.** 10 black pieces + 9 black pieces = 19 black pieces or 1 red whole and 7 black pieces
- **2. A.** Estimates will vary. Possible response: a little more than 2
 - **B.** $3\frac{10}{15} 1\frac{6}{15} = 2\frac{4}{15}$
 - **C.** Responses will vary. Possible response: I estimated that the difference would be a little more than 2, and $2\frac{4}{15}$ is so I am confident about my answer.

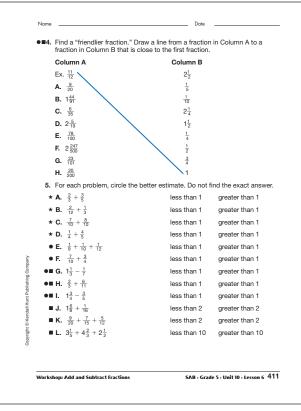
3.



- 4. Column A **Column B**
 - $\frac{11}{12}$ $2\frac{1}{2}$ Ex. $\frac{9}{20}$ 1 Α. $1\frac{44}{91}$ Β. $\frac{1}{10}$ $\frac{6}{35}$ $2\frac{1}{4}$ C. $2\frac{5}{19}$ D. $\frac{78}{100}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ E. $2\frac{247}{500}$ F. $\frac{23}{101}$ G. $\frac{20}{200}$
- **5. A.** less than 1

Η.

- **B.** less than 1
- **C.** greater than 1
- **D.** greater than 1
- **E.** less than 1
- F. greater than 1
- **G.** greater than 1
- **H.** greater than 1
- **I.** less than 1
- **J.** less than 2
- **K.** less than 2
- **L.** greater than 10
- 6. A. Estimates will vary. Possible response: About $1\frac{1}{2}$ pounds. $\frac{7}{8}$ is almost 1 and $\frac{9}{16}$ is just over $\frac{1}{2}$, so $1\frac{1}{2}$ pounds is a close estimate.
 - **B.*** $1\frac{1}{2}$ pounds + $2\frac{1}{8}$ pounds is less than 4 pounds. Possible explanation: 1 pound plus 2 pounds is 3 pounds. When I add the fractions $\frac{1}{2}$ plus $\frac{1}{8}$ is just a little over $\frac{1}{2}$, not enough to make another whole.
- 7. A. I disagree with Shannon. Possible explanation: $\frac{3}{7}$ cup can't be right for the sum because she started with $\frac{1}{2}$ cup and added more. She added the denominators together and that is incorrect.
 - **B.** $\frac{2}{5} + \frac{1}{2} = \frac{4}{10} + \frac{5}{10} = \frac{9}{10}$ cup of sugar



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Name	Date
★●■6	Mr. Moreno is packing paperback books in boxes to ship to another school.
	$\begin{array}{c} \frac{7}{8} \text{ ib}, + \frac{9}{16} \text{ ib}, \\ \text{Box A} \\ \text{Box B} \end{array}$
	 Estimate the weight of the books in Box A. Show or tell how you decided.
	B. Is the weight of both boxes over or under 4 pounds? Do not find an exact answer. Show or tell how you decided.
*7. Ana brou	Ind Subtract and Shannon are baking. Shannon adds $\frac{2}{5}$ cup sugar to $\frac{1}{2}$ cup wn sugar.
	s
	r Andrew

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	B. Exactly how much does Shannon have when she combines the two sugars? Use the models to show the sum.
	$\frac{2}{5} = \frac{1}{10}$ $\frac{1}{2} = \frac{1}{10}$
	+ =
*•=8	 An a needs 2³/₄ cups of flour for one recipe and 2⁵/₄ cups for another recipe. She measures the flour she has in her kitchen and she has 5 cups. A. Do you agree with Ana? Why or why not?
any	B. Exactly how much flour does Ana need to make both recipes?
Sopyright © Kendall Hunt Publishing Company	b. Ana can only find a $\frac{1}{8}$ -cup measure. How many $\frac{1}{8}$ of a cup will she ne equal the amounts she needs?
II Hunt P.	A. $\frac{1}{4}$ cup of chocolate chips = \bigcup_{8}^{1} cup of chocolate chips
Kenda	B. 1 cup of crispy rice cereal = \bigsqcup_{8}^{1} cup of crispy rice cereal C. $2\frac{3}{4}$ cups of flour = \bigsqcup_{8}^{1} cups of flour
Copyright	C. $2\frac{3}{4}$ cups of flour = $\frac{1}{8}$ cups of flour D. $1\frac{1}{2}$ cups of sugar = $\frac{1}{8}$ cups of sugar

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Now he is simplest for	able to add hundredths: $\frac{80}{100} + \frac{15}{100} = \frac{95}{100}$. He rewrites it in prm: $\frac{19}{20}$.	
	$\frac{3\times5}{20\times5} = \frac{15}{100}$	
	iplied 20×5 to get 100, so he multiplies the numerator and tor by 5 to find an equivalent fraction.	
<u>.</u>	$\frac{4 \times 20}{5 \times 20} = \frac{80}{100}$	ompany
	tor by 20 to find an equivalent fraction.	viishing Co
Chrie mult	iplied 5 \times 20 to get 100, so he multiplies the numerator and	unt Pub
	To decide what the numerator will change to. I think about what I multiplied 5 by to get 100, and what I multiplied 20 by to get 100.	Copyright @ Kendall Hunt Publishing Company
	iplies the two denominators together: $5 \times 20 = 100$. 100 is a common tor for 5 and 20.	Copyrig
Chris's		
know they from twer common fractions.		
В.	Show how to check your answer with addition.	
	number sentence.	
●■10. A.	. Ana measures $1\frac{g}{8}$ of a cup of flour. How many more cups does she need to make $2\frac{g}{6}$ cups of flour? Show your work and include a	

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- **8. A.** I disagree with Ana. She only added the whole numbers and she should have added the fractions too because they make another whole cup.
 - **B.** $2\frac{2}{3} + 2\frac{3}{4}$ = $2\frac{8}{12} + 2\frac{9}{12}$

$$=4\frac{17}{12}$$

- $=5\frac{5}{12}$ cups flour
- 9. A. $\frac{1}{4}$ cup of chocolate chips = $\frac{2}{8}$ cup of chocolate chips
 - **B.** 1 cup of crispy rice cereal

$$=\frac{8}{8}$$
 cup of crispy rice cereal

C.
$$2\frac{3}{4}$$
 cups of flour = $\frac{\boxed{22}}{8}$ cups of flour

- **D.** $1\frac{1}{2}$ cups of sugar $=\frac{12}{8}$ cups of sugar
- **10. A**. $2\frac{2}{3} 1\frac{5}{8} = 1\frac{1}{24}$ more cups of flour **B**. $1\frac{1}{24} + 1\frac{5}{8} = 1\frac{1}{24} + 1\frac{15}{24} = 2\frac{16}{24} = 2\frac{2}{3}$

- **11. A.** The common denominator is 12. $\frac{2 \times 4}{3 \times 4} = \frac{8}{12} \qquad \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$ $\frac{2 \times \boxed{4}}{3 \times \boxed{4}} = \frac{\boxed{8}}{\boxed{12}}$ $\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$
 - **B.** The common denominator is 10. $\frac{5}{5} = \frac{5}{10}$

$$\frac{4 \times \boxed{2}}{5 \times \boxed{2}} = \frac{\boxed{8}}{\boxed{10}} \qquad \qquad \frac{1 \times \boxed{3}}{2 \times \boxed{3}}$$
$$\frac{8}{10} - \frac{5}{10} = \frac{3}{10}$$

C. Possible response:

$$\frac{1 \times \boxed{2}}{2 \times \boxed{2}} = \frac{\boxed{2}}{4}$$
$$\frac{2}{4} + \frac{3}{4} = \frac{5}{4} = 1\frac{1}{4}$$
12. A. $\frac{4}{10} + \frac{3}{10} = \frac{7}{10}$
B. $\frac{5}{4} + \frac{8}{10} = \frac{13}{10} = 11$

B.
$$\frac{1}{12} + \frac{1}{12} = \frac{1}{12} = \frac{1}{12}$$

C. $\frac{6}{8} - \frac{1}{8} = \frac{5}{8}$

the problems. You can check your work with fraction circle pieces. A. Solve $\frac{2}{3} + \frac{1}{4}$. The common denominator is \Box .
$\begin{array}{c} 2 \times \\ 3 \times \\ \end{array} = \begin{array}{c} \\ \\ \end{array} \\ \end{array}$
Write the new number sentence and solve it.
B. Solve $\frac{4}{5} - \frac{1}{2}$. The common denominator is \square .
$\frac{4\times \square}{5\times \square} = \frac{\square}{\square} \qquad \qquad \frac{1\times \square}{2\times \square} = \frac{\square}{\square}$
Write the new number sentence and solve it.
C. Chris is solving $\frac{1}{2} + \frac{3}{4}$. He multiplies 2 × 4 and finds the common denominator 8. Find a common denominator other than 8 to solve $\frac{1}{2} + \frac{3}{4}$.
$\frac{1 \times \Box}{2 \times \Box} = \frac{\Box}{\Box}$
Write the new number sentence and solve it. Write the answer in simplest form.
+ ³ / ₄ =

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		Date	
Car	la's Way		
until s Stude	she finds a comm ent Guide Referen	looks at the denominators and thinks about their multiples on one. The <i>Multiplication and Division Facts</i> chart in the ce section helps. If she can't find a common multiple, she minators together to find one like Chris does.	
		$\frac{4}{5} + \frac{3}{20}$	
	and see if 5 × so	a shortcut I look at the denominators me number equals 20.1 know that a common denominator is 20.	
	ples of 5: 5, 10, 1 ples of 20: 20, 40		
	ommon multiple i		
multip		$\frac{4}{5}$ so that it has a common denominator of 20. She 20, so she also multiplies the numerator by 4 and finds	
		$\frac{4\times4}{5\times4} = \frac{16}{20}$	9
Now	she is able to add	I twentieths: $\frac{16}{20} + \frac{3}{20} = \frac{19}{20}$.	- Bullet
*12.		enominators and equivalent fractions Carla's way to solve ou can check your work with fraction circle pieces.	0.1000000
	A. $\frac{2}{5} + \frac{3}{10}$	Number sentence	10111
	B. $\frac{5}{12} + \frac{2}{3}$	Number sentence	tradition Summary stress stress of the
	C. $\frac{3}{4} - \frac{1}{8}$	Number sentence	

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					Date		
13.	Solve the problem sure your answers	s using a are reaso	paper-ar onable. W	d-pencil s 'rite your a	strategy. Es answer in s	stimate to implest fo	make rm.
	• A. $\frac{2}{5} + \frac{2}{3} = $						
	• B. $\frac{11}{3} + \frac{5}{2} = $						
	• C. $2\frac{1}{8} - 1\frac{1}{4} =$					-	
	• D. $\frac{6}{8} - \frac{2}{7} = -$						
	• E. $4\frac{1}{4} - 3\frac{5}{12} =$	=				_	
	■ F. 4 ⁸ / ₁₁ - 2 ¹ / ₃ =						
	G. $\frac{12}{5} + \frac{9}{13} =$					_	
	■ H. 3 ⁷ / ₉ - 2 ³ / ₄ =						
						-	
*14.	Choose fraction pa pairs you choose.			/rite numb			w the
*14.				/rite numb		es to show	
	pairs you choose.	Use fract	ion circle	/rite numb pieces.	ber sentend	ces to show	
	pairs you choose. $\frac{7}{8}$ $\frac{1}{3}$	Use fract	ion circle	/rite numb pieces.	ber sentend	ces to show	
	pairs you choose. $\frac{7}{8}$ $\frac{1}{3}$ Number sentence	Use fract	é é	/rite numb pieces.	ber sentend	es to show	
+14.	pairs you choose. $\frac{7}{8}$ $\frac{1}{3}$ Number sentence Number sentence	Use fract	ion circle	/rite numb pieces.	er sentenc	2 8	w the

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●∎15.	Make each number sentence true. You cannot use the digits that are
	already in each problem.
	A. $\frac{\Box}{5} - \frac{\Box}{3} = 1$ B. $\frac{2}{\Box} + \frac{3}{\Box} = \frac{1}{2}$
	C. $\frac{\Box}{8} + \frac{5}{\Box} = \frac{1}{2}$ D. $\frac{9}{\Box} + \frac{\Box}{8} = 1$
	E. $\frac{4}{1} - \frac{4}{1} = \frac{1}{4}$
	F. Explain how you know your answer to Question 15B is correct by using fraction circle pieces. Draw or describe the pieces you use.
/	
√ c	heck-In: Questions 16-17
*●∎16	5. Solve the problems. Show your work.
	A. $\frac{3}{8} + \frac{4}{5}$ B. $5\frac{3}{4} - 2\frac{1}{16}$ C. $2\frac{5}{12} - 1\frac{2}{3}$
	D. Choose one problem from Question 16A–C. Show or tell how estimation can help you check the reasonableness of your answer.

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C. $\frac{7}{8}$ D. $\frac{26}{56}$ E. $\frac{5}{6}$ F. $2\frac{13}{33}$ G. $3\frac{6}{65}$ H. $6\frac{19}{36}$ I4. $\frac{7}{8} + \frac{1}{8} = 1;$ $\frac{1}{3} + \frac{4}{6} = 1;$ $\frac{3}{4} + \frac{2}{8} = 1;$ $\frac{5}{10} + \frac{4}{8} = 1$

13. A. $1\frac{1}{15}$ **B.** $6\frac{1}{6}$

15. Answers may vary. Possible responses given.

A.
$$\frac{15}{5} - \frac{6}{3} = 1$$

B. $\frac{2}{10} + \frac{3}{10} = \frac{1}{2}$
C. $\frac{2}{8} + \frac{5}{20} = \frac{1}{2}$
D. $\frac{9}{18} + \frac{4}{8} = 1$
E. $\frac{4}{8} - \frac{4}{16} = \frac{1}{4}$

F. Possible response: $\frac{2}{10} + \frac{3}{10} = \frac{1}{2}$ with fraction circle pieces is 2 purples + 3 purples = 1 pink.

A.
$$\frac{3}{8} + \frac{4}{5} =$$

 $\frac{15}{40} + \frac{32}{40} = \frac{47}{40} = 1\frac{7}{40}$
B. $5\frac{3}{4} - 2\frac{1}{16} =$
 $\frac{23}{4} - \frac{33}{16} =$
 $\frac{92}{16} - \frac{33}{16} = \frac{59}{16} = 3\frac{11}{16}$
C. $2\frac{5}{12} + 1\frac{2}{3} =$
 $2\frac{5}{12} + 1\frac{8}{12} = 3\frac{13}{12} = 4\frac{1}{12}$

16.

D. Responses will vary. Possible response: My answer of $4\frac{1}{12}$ is reasonable because $2\frac{5}{12}$ is close to $2\frac{1}{2}$. $2\frac{1}{2} + 1\frac{2}{3}$ is a little more than 4, like $4\frac{1}{12}$.

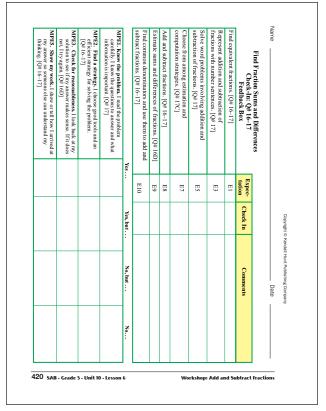
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17. A.* $3\frac{1}{2}$ cups of granola; $\frac{7}{8} + \frac{7}{8} + \frac{7}{8} + \frac{7}{8} = \frac{28}{8} = 3\frac{1}{2}$ cups of granola **B.*** $\frac{1}{6}$ cup more of granola; $3\frac{2}{3} - 3\frac{1}{2} = 3\frac{4}{6} - 3\frac{3}{6} = \frac{1}{6}$ cup of granola

- **C.** Answers will vary.

	47 Jahr
ו∎	17. John needs to pack carefully because he does not have any extra room in his small backpack. He wants to pack one serving of granola for each breakfast on his hiking trip. One serving of granola is ² / ₆ cups.
	A. How many cups of granola should John pack in a container so that he and Mark can each have exactly one serving for breakfast for two days? Show how you solved the problem.
	Number sentence
	B. The container in John's backpack can hold $3\frac{2}{3}$ cups. How many mo cups of granola can he fit into the container? Show how you solved the problem.
	Number sentence
	C. How did you decide whether to estimate or find an exact answer in Questions 17A and 17B?
Ĩ	
game	se to play either <i>Circle Duets</i> to practice adding fractions or the <i>Closest to</i> to practice estimating and subtracting fractions. Both games are in the <i>ant Activity Book</i> .
Choo game Stude	
	hop: Add and Subtract Fractions SAB · Grade 5 · Unit 10 · Lesson 6 4

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