CHAPTER 5: ADDING AND SUBTRACTING FRACTIONS AND DECIMALS

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ANSWER KEY P. 14-15

5.1 Adding Like Fractions

Key Vocabulary 5.2
vertical:

horizontal:

<u>Think 5.1</u>

- Set up fractions to add vertically.
- Keep denominator.
- Add numerators.
- Convert improper Fractions to mixed numbers as needed.
- Simplify by reducing fractions to lowest terms as needed.

1	4
$\overline{4}$	8
1	6
$+ \frac{1}{4}$	$+ \frac{-}{8}$
2 1	$\frac{10}{10} = 1^2 = 1^1$
$\frac{-}{4} = \frac{-}{2}$	

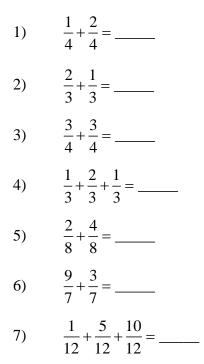
<u>Try It 5.1</u>

Find the sums. Then convert to mixed number and simplify as needed.

1) $\frac{1}{3} + \frac{1}{3} =$ _____ 2) $\frac{2}{6} + \frac{2}{6} =$ _____ 3) $\frac{3}{8} + \frac{1}{8} =$ _____ 4) $\frac{3}{6} + \frac{5}{6} =$ _____ 5) $\frac{4}{5} + \frac{5}{5} =$ _____ 6) $\frac{6}{9} + \frac{2}{9} =$ _____

5.2 Practice Exercises

Find the sums. Then convert to mixed number and simplify as needed.



8) Jill jogged six tenths of a mile. Abby jogged eight tenths of a mile. How many miles did they jog altogether? _____

9) Henry bought some advertising space in a local magazine. One space cost \$250 for $\frac{7}{10}$ of a page. The other space cost \$175 for $\frac{3}{10}$ of a page. What was the combined amount of space Henry bought?

10) How much did Henry pay for the ads altogether?

5.2 Adding Unlike Fractions

Key Vocabulary 5.2

least common denominator (LCD):

<u>Think 5.2</u>

- Set up fractions to add vertically.
- Use common multiples to find the least common denominator (LCD).
- Raise fractions to higher terms.
- Add numerators.
- Convert improper fractions to mixed numbers as needed.
- Simplify by reducing fractions to lowest terms as needed.

<u>Try It 5.2</u>

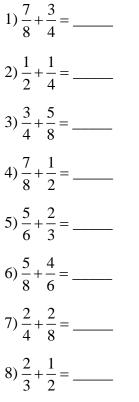
Find the sums and simplify as needed.

1)
$$\frac{2}{4} + \frac{3}{5} =$$

3) $\frac{2}{6} + \frac{6}{8} =$
5) $\frac{2}{3} + \frac{4}{9} =$
(2) $\frac{4}{6} + \frac{8}{9} =$
(4) $\frac{3}{8} + \frac{5}{12} =$
(5) $\frac{2}{3} + \frac{4}{9} =$
(6) $\frac{3}{4} + \frac{5}{6} =$

5.2 Practice Exercises

Add fractions, convert to mixed numbers, and simplify as needed.

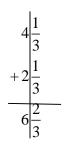


9) Samantha used $\frac{1}{6}$ C of sugar, $\frac{2}{3}$ C of milk, and $\frac{4}{9}$ C of flour for her pie recipe. How many cups of ingredients did she use altogether? _____ 10) Rene' bought $\frac{3}{4}$ pounds of pecans, $\frac{1}{3}$ pound of walnuts, and $\frac{4}{6}$ pounds of almonds to make homemade nutritional snacks. How many pounds of nuts did she buy in all?

5.3 Adding Mixed Numbers

<u>Think 5.3</u>

- Line up fractions to add vertically.
- Find least common denominator (LCD) as needed and raise fractions to higher terms.
- Add whole numbers on left side of mixed number.
- Keep denominator and add numerators. on right side of fractions.
- Convert improper fractions to mixed number as needed then combine whole numbers from both sides.
- Simplify as needed.



$$3\frac{2}{4}x\frac{3}{3} = \frac{6}{12}$$

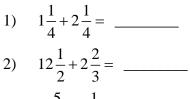
$$+ 2\frac{5}{6}x\frac{2}{2} = \frac{10}{12}$$

$$5 = \frac{16}{12} = 1\frac{4}{12} = 1\frac{1}{3}$$

$$+ 1$$

$$= 6\frac{1}{3}$$

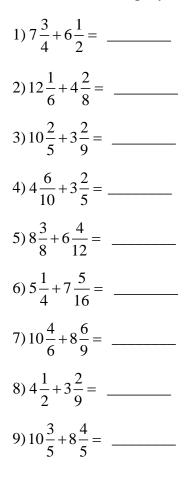




- 3) $4\frac{5}{12} + 2\frac{1}{3} =$ _____
- 4) $6\frac{1}{4} + 2\frac{8}{12} =$ _____ 5) $3\frac{3}{4} + 2\frac{1}{6} =$ _____ 6) $8\frac{2}{6} + 3\frac{5}{9} =$ _____

5.3 Practice Exercises

Find sums. Find least common denominator (LCD), convert improper to mixed number, combine whole numbers, and simplify fractions as needed.



10) Ramón is conditioning for a race. He ran $2\frac{2}{3}$ miles Friday, $1\frac{3}{4}$ miles on Saturday,

and $3\frac{4}{6}$ miles on Sunday. How many miles did he run during the three days.

5.4 Subtracting Fractions From Whole Numbers

Key Vocabulary 5.4 regrouping fractions:

<u>Think 5.4</u>

- Set up fractions to subtract vertically.
- Regroup by borrowing 1 from the top whole number using bottom denominator.
- Subtract whole numbers on left side of fraction.
- Subtract numerators of left side of fraction keeping denominator.
- Simplify by reducing fraction to lowest terms as needed.

$$2 - \frac{3}{4} = -\frac{\frac{3}{4}}{1\frac{1}{4}}$$

$$5 - 1\frac{\frac{4}{8}}{\frac{1}{8}} = -\frac{1\frac{4}{8}}{\frac{1}{2}}$$

$$5 - 1\frac{\frac{4}{8}}{\frac{1}{8}} = -\frac{1\frac{4}{8}}{\frac{4}{8}}$$

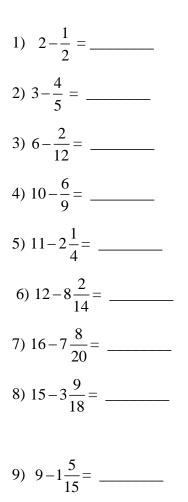
Try It 5.4

Find the differences. Borrow, regroup, and simplify as needed.



5.4 Practice Exercises

Subtract fractions. Borrow, regroup, and simplify fractions by reducing to lowest terms as needed. Find the differences. Borrow, regroup, and simplify as needed.



10) Jennifer bought 5 loaves of bread. She used $2\frac{6}{8}$ loaves at dinner. How much does she have left out of the original loaves?

5.5 Subtracting Fractions From Fractions

<u>Think 5.5</u>

- Find the least common denominator (LCD) and raise fractions to higher terms as needed.
- If top numerator has less value the bottom denominator, borrow from top whole number.
- Regroup the whole number and add to top fraction.
- Subtract numerators keeping common denominator.
- Simplify as needed by reducing answer to lowest terms.

$$10\frac{1}{4} - 2\frac{3}{4} = \begin{array}{c} & 910\frac{5}{4} \\ & 910\frac{1}{4} + 4 \\ & -2 & \frac{3}{4} \\ & 7 & \frac{2}{4} = 7\frac{1}{2} \end{array}$$

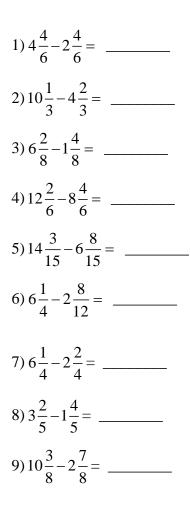
<u>Try It 5.5</u>

Find the differences. Find least common denominators, borrow, regroup, and simplify answers as needed.

- 1) $6\frac{1}{4} 2\frac{2}{4} =$ _____
- 2) $3\frac{2}{5}-1\frac{4}{5} =$ _____
- 3) $10\frac{3}{8} 2\frac{7}{8} =$ _____
- 4) $12\frac{2}{12}-4\frac{2}{3} =$ _____
- 5) $16\frac{6}{9} 14\frac{5}{6} =$ _____
- $6) \qquad 8\frac{3}{7} 4\frac{8}{14} = \underline{\qquad}$

5.5 Practice Exercises

Find the differences. Find least common denominators, borrow, regroup, and simplify answers as needed.

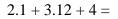


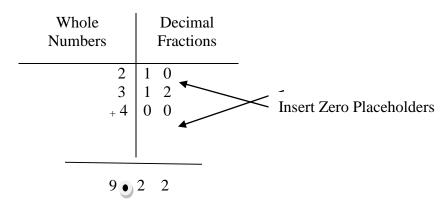
10) Marco bought a rope that was $16\frac{1}{4}$ feet long. He used $2\frac{1}{3}$ feet to tie up a tree branch and $4\frac{1}{6}$ feet to tie down a load of leaves in his truck. How much rope does he have left from the original piece of rope. (Hint: Two step question.)

5.6 Adding and Subtracting Decimals

Think 5.6

- Line up decimals using decimals.
- Place whole numbers on left side of decimal and decimal fractions to right side of decimal.
- Add zeros as placeholders to make decimals share same place value.
- Drop decimal straight down then find sum or difference.





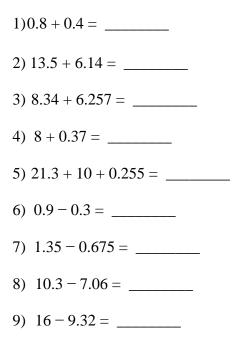
<u>Try It 5.6</u>

Find sums or differences. Line up numbers using decimal points and add zeros as place holders as needed.

- (1) 14.12 + 3.6 = _____
- (2) 2.345 + 0.14 = _____
- (3) 13 + 0.368 = _____
- (4) 10.3 0.45 = _____
- (5) 73 14.037 = _____
- (6) 12.2 3.243 = _____

5.6 Practice Exercises

Find sums or differences. Line up numbers using decimal points and add zeros as place holders as needed.



10) Harry biked 13.3 miles. Michael biked 9.37 miles. Saran biked 8 miles. How far

did they bike altogether?

5 1	Chapter 5: Answer Key <u>5.3</u>		er Key
<u>5.1</u>	$1)\frac{3}{4}$		$1)14\frac{1}{4}$
	2)1 3) $1\frac{1}{2}$		2) $16\frac{5}{12}$
	$(4)1\frac{1}{3}$		3) $13\frac{28}{45}$
	$5)\frac{3}{4}$		4) 8 5) $14\frac{17}{24}$
	$4 \\ 6) 1\frac{5}{7}$		$6)12\frac{9}{16}$
			$7)19\frac{1}{3}$
	7) $1\frac{1}{3}$ 8) $1\frac{2}{5}$		8) $7\frac{13}{18}$
	9)1 page		$9)19\frac{2}{5}$
<u>5.2</u>	10) \$ 425		10) $8\frac{1}{12}$
<u>5.2</u>	$1)1\frac{5}{8}$	<u>5.4</u>	1)1 ¹
	2) $\frac{3}{4}$		1) $1\frac{1}{2}$ 2) $2\frac{1}{2}$
	$\frac{4}{3}$ 3) 1 $\frac{3}{8}$		2) $2\frac{1}{5}$ 3) $5\frac{5}{6}$
	$4)1\frac{3}{8}$		
	3) $1\frac{3}{8}$ 4) $1\frac{3}{8}$ 5) $1\frac{1}{2}$ 6) $1\frac{7}{24}$ 7) $\frac{3}{4}$		4) $9\frac{1}{3}$ 5) $8\frac{3}{4}$ 6) $3\frac{6}{7}$ 7) $8\frac{3}{5}$
	6) $1\frac{7}{24}$		$\frac{4}{6}$ 6) $3\frac{6}{7}$
	7) $\frac{3}{4}$		$7) 8\frac{3}{5}$
	$ \begin{array}{r} 4 \\ 8) 1 \frac{1}{6} \\ 9) 1 \frac{5}{18} \\ 10) 1 \frac{3}{4} \end{array} $		8) $11\frac{1}{2}$ 9) $7\frac{2}{3}$
	$9)1\frac{5}{18}$		9) $7\frac{2}{3}$
	10) $1\frac{3}{4}$		10) $2\frac{1}{4}$

 $\frac{5.5}{1)2}$ 1)2
2) $5\frac{2}{3}$ 3) $4\frac{3}{4}$ 4) $3\frac{2}{3}$ 5) $7\frac{2}{3}$ 6) $3\frac{7}{12}$ 7) $3\frac{3}{4}$ 8) $1\frac{3}{5}$ 9) $7\frac{1}{2}$ 10) $9\frac{3}{4}$ ft. 6 ½ ft

<u>5.6</u>

- 1) 1.2
- 2) 19.64
- 3) 14.597
- 4) 8.37
- 5) 31.555
- 6) 0.6
- 7) 0.675
- 8) 3.24
- 9) 6.68
- 10) 30.67