

# Adding and Subtracting Fractions with Like Denominators

Add or subtract. Simplify if possible.

$$\begin{array}{r} 1. \quad \frac{10}{12} \\ + \frac{8}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad \frac{8}{9} \\ - \frac{5}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \frac{7}{10} \\ + \frac{2}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \frac{2}{3} \\ - \frac{1}{3} \\ \hline \end{array}$$

$$5. \quad \frac{6}{8} + \frac{5}{8} + \frac{3}{8} = \underline{\hspace{2cm}} \quad 6. \quad \frac{8}{10} - \frac{3}{10} = \underline{\hspace{2cm}}$$

$$7. \quad \frac{1}{4} + \frac{2}{4} + \frac{3}{4} = \underline{\hspace{2cm}} \quad 8. \quad \frac{9}{11} - \frac{1}{11} = \underline{\hspace{2cm}}$$

$$9. \quad \frac{2}{5} + \frac{2}{5} + \frac{3}{5} = \underline{\hspace{2cm}} \quad 10. \quad \frac{7}{8} - \frac{3}{8} = \underline{\hspace{2cm}}$$

11. What fraction could you add to  $\frac{4}{7}$  to get a sum greater than 1?

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12. **Reasoning** Write three fractions, using 10 as the denominator, whose sum is 1.

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13. Which of the following represents the difference between two equal fractions?

A 1

B  $\frac{1}{2}$

C  $\frac{1}{4}$

D 0

14. **Explain It** In one night, George reads 3 chapters of a book with 27 chapters. After the second night, he has read a total of  $\frac{8}{27}$  of the book. Explain how you would determine the number of chapters George read the second night. Solve the problem.

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Name \_\_\_\_\_

# Common Multiples and Least Common Multiple

Find the LCM of each pair of numbers.

1. 3 and 6 \_\_\_\_\_
2. 7 and 10 \_\_\_\_\_
3. 8 and 12 \_\_\_\_\_
4. 2 and 5 \_\_\_\_\_
5. 4 and 6 \_\_\_\_\_
6. 3 and 4 \_\_\_\_\_
7. 5 and 8 \_\_\_\_\_
8. 2 and 9 \_\_\_\_\_
9. 6 and 7 \_\_\_\_\_
10. 4 and 7 \_\_\_\_\_
11. 5 and 20 \_\_\_\_\_
12. 6 and 12 \_\_\_\_\_

13. Rosario is buying pens for school. Blue pens are sold in packages of 6. Black pens are sold in packages of 3, and green pens are sold in packages of 2. What is the least number of pens she can buy to have equal numbers of pens in each color?
- \_\_\_\_\_

14. Jason's birthday party punch calls for equal amounts of pineapple juice and orange juice. Pineapple juice comes in 6-oz cans and orange juice comes in 10-oz cans. What is the least amount he can mix of each kind of juice without having any left over?
- \_\_\_\_\_

15. Reasonableness Dawn ordered 4 pizzas each costing between 8 and 12 dollars. What is a reasonable total cost of all 4 pizzas?

- A less than \$24                      C between \$32 and \$48  
B between \$12 and \$24              D about \$70

16. Explain It Why is 35 the LCM of 7 and 5?
- \_\_\_\_\_
- \_\_\_\_\_

# Adding Fractions with Unlike Denominators

Find each sum. Simplify if necessary.

1.  $\frac{2}{9} + \frac{1}{3}$  \_\_\_\_\_

2.  $\frac{1}{7} + \frac{3}{21}$  \_\_\_\_\_

3.  $\frac{2}{3} + \frac{1}{5}$  \_\_\_\_\_

4.  $\frac{1}{4} + \frac{2}{3}$  \_\_\_\_\_

5.  $\frac{1}{12} + \frac{4}{6}$  \_\_\_\_\_

6.  $\frac{1}{2} + \frac{3}{5}$  \_\_\_\_\_

7.  $\frac{1}{6} + \frac{5}{12}$  \_\_\_\_\_

8.  $\frac{4}{6} + \frac{1}{3}$  \_\_\_\_\_

9.  $\frac{2}{5} + \frac{1}{8}$  \_\_\_\_\_

10.  $\frac{3}{4} + \frac{4}{5}$  \_\_\_\_\_

11.  $\frac{11}{12} + \frac{1}{3}$  \_\_\_\_\_

12.  $\frac{4}{8} + \frac{1}{2}$  \_\_\_\_\_

Jeremy collected nickels for one week. He is making stacks of his nickels to determine how many he has. The thickness of one nickel is  $\frac{1}{16}$  in.

13. How tall is a stack of 16 nickels?

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14. What is the combined height of 3 nickels, 2 nickels, and 1 nickel?

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15. **Number Sense** Which fraction is greatest?

A  $\frac{5}{6}$

B  $\frac{7}{9}$

C  $\frac{2}{3}$

D  $\frac{9}{12}$

16. **Explain It** Which equivalent fraction would you have to use in order to add  $\frac{3}{5}$  to  $\frac{21}{25}$ ?

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Name \_\_\_\_\_

# Subtracting Fractions with Unlike Denominators

Find the difference. Simplify if necessary.

1.  $\frac{10}{12} - \frac{1}{4}$  \_\_\_\_\_      2.  $\frac{9}{10} - \frac{3}{5}$  \_\_\_\_\_      3.  $\frac{7}{8} - \frac{2}{6}$  \_\_\_\_\_
4.  $\frac{7}{12} - \frac{1}{4}$  \_\_\_\_\_      5.  $\frac{4}{5} - \frac{1}{3}$  \_\_\_\_\_      6.  $\frac{2}{3} - \frac{1}{6}$  \_\_\_\_\_
7.  $\frac{4}{8} - \frac{1}{4}$  \_\_\_\_\_      8.  $\frac{4}{10} - \frac{1}{5}$  \_\_\_\_\_      9.  $\frac{7}{9} - \frac{2}{3}$  \_\_\_\_\_
10.  $\frac{9}{15} - \frac{1}{3}$  \_\_\_\_\_      11.  $\frac{4}{12} - \frac{1}{6}$  \_\_\_\_\_      12.  $\frac{14}{20} - \frac{3}{5}$  \_\_\_\_\_

13. The pet shop owner told Jean to fill her new fish tank  $\frac{3}{4}$  full with water. Jean filled it  $\frac{9}{12}$  full. What fraction of the tank does Jean still need to fill?
- \_\_\_\_\_

14. Paul's dad made a turkey pot pie for dinner on Wednesday. The family ate  $\frac{4}{8}$  of the pie. On Thursday after school, Paul ate  $\frac{2}{16}$  of the pie for a snack. What fraction of the pie remained?
- \_\_\_\_\_

15. **Algebra** Gracie read 150 pages of a book she got for her birthday. The book is 227 pages long. Which equation shows how to find the amount she still needs to read to finish the story?

A  $150 - n = 227$       C  $n - 150 = 227$

B  $227 + 150 = n$       D  $n + 150 = 227$

16. **Explain It** Why do fractions need to have a common denominator before you add or subtract them?
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

# Adding Mixed Numbers

Estimate the sum first. Then add. Simplify if necessary.

1.  $7\frac{2}{3} + 8\frac{5}{6}$  \_\_\_\_\_      2.  $4\frac{3}{4} + 2\frac{2}{5}$  \_\_\_\_\_  
 3.  $11\frac{9}{10} + 3\frac{1}{20}$  \_\_\_\_\_      4.  $7\frac{6}{7} + 5\frac{2}{7}$  \_\_\_\_\_  
 5.  $5\frac{8}{9} + 3\frac{1}{2}$  \_\_\_\_\_      6.  $21\frac{11}{12} + 17\frac{2}{3}$  \_\_\_\_\_

7. **Number Sense** Write two mixed numbers with a sum of 3.

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8. What is the total measure of an average man's brain and heart in kilograms?

\_\_\_\_\_

**Vital Organ Measures**

Average woman's brain	$1\frac{3}{10}$ kg	$2\frac{4}{5}$ lb
Average man's brain	$1\frac{2}{5}$ kg	3 lb
Average human heart	$\frac{3}{10}$ kg	$\frac{7}{10}$ lb

9. What is the total weight of an average woman's brain and heart in pounds? \_\_\_\_\_
10. What is the sum of the measures of an average man's brain and an average woman's brain in kilograms? \_\_\_\_\_
11. Which is a good comparison of the estimated sum and the actual sum of  $7\frac{7}{8} + 2\frac{11}{12}$  ?
- A** Estimated < actual                      **C** Actual > estimated
- B** Actual = estimated                      **D** Estimated > actual
12. **Explain It** Can the sum of two mixed numbers be equal to 2? Explain why or why not.

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Name \_\_\_\_\_

# Subtracting Mixed Numbers

Estimate the difference first. Then subtract. Simplify if necessary.

1.  $10\frac{3}{4}$   
-  $7\frac{1}{4}$   
\_\_\_\_\_

2.  $7\frac{3}{7}$   
-  $2\frac{8}{21}$   
\_\_\_\_\_

3.  $3$   
-  $2\frac{2}{3}$   
\_\_\_\_\_

4.  $17\frac{7}{8}$   
-  $12\frac{3}{12}$   
\_\_\_\_\_

5.  $9\frac{5}{9} - 6\frac{5}{6}$  \_\_\_\_\_

6.  $4\frac{3}{4} - 2\frac{2}{3}$  \_\_\_\_\_

7.  $6\frac{1}{4} - 3\frac{1}{3}$  \_\_\_\_\_

8.  $5\frac{1}{5} - 3\frac{7}{8}$  \_\_\_\_\_

9.  $8\frac{2}{7} - 7\frac{1}{3}$  \_\_\_\_\_

10.  $2\frac{9}{10} - 2\frac{1}{3}$  \_\_\_\_\_

**Strategy Practice** The table shows the length and width of several kinds of bird eggs.

**Egg Sizes**

Bird	Length	Width
Canada goose	$3\frac{2}{5}$ in.	$2\frac{3}{10}$ in.
Robin	$\frac{3}{4}$ in.	$\frac{3}{5}$ in.
Turtledove	$1\frac{1}{5}$ in.	$\frac{9}{10}$ in.
Raven	$1\frac{9}{10}$ in.	$1\frac{3}{10}$ in.

11. How much longer is the Canada goose egg than the raven egg?  
\_\_\_\_\_

12. How much wider is the turtledove egg than the robin egg?  
\_\_\_\_\_

13. Which is the difference of  $21\frac{15}{16} - 18\frac{3}{4}$ ?

A  $2\frac{7}{16}$

B  $2\frac{9}{16}$

C  $3\frac{3}{16}$

D  $3\frac{9}{16}$

14. **Explain It** Explain why it is necessary to rename  $4\frac{1}{4}$  if you subtract  $\frac{3}{4}$  from it.  
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\_\_\_\_\_  
\_\_\_\_\_

# Problem Solving: Try, Check, and Revise

For questions 1 and 2, suppose you have  $2 \times 2$  ft,  $3 \times 3$  ft,  $4 \times 4$  ft, and  $5 \times 5$  ft tiles.

1. Which tiles can be used to cover a  $12 \times 12$  ft floor? \_\_\_\_\_

2. Which tiles can be used to cover a  $9 \times 9$  ft floor? \_\_\_\_\_

3. What size rectangular floor can be completely covered by using only  $3 \times 3$  ft tiles OR  $5 \times 5$  ft tiles? Remember, you can't cut tiles or combine the two tile sizes.  
\_\_\_\_\_

4. Adult tickets cost \$6 and children's tickets cost \$4. Mrs. LeCompte says that she paid \$30 for tickets, for both adults and children. How many of each ticket did she buy?  
\_\_\_\_\_  
\_\_\_\_\_

5. **Reasoning** The sum of two odd numbers is 42. They are both prime numbers, and the difference of the two numbers is 16. What are the two numbers?

A 20 and 22

B 17 and 25

C 9 and 33

D 13 and 29

6. **Explain It** Marcy wants to put tiles on a bathroom floor that measures  $10 \text{ ft} \times 12 \text{ ft}$ . What kind of square tiles should she buy to tile her floor? Explain.  
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