3rd Quarter

Mad Minute Averages

Name _____ wk of 1-9 _____ Date _____

	wk of 1-4		wk of 1-9		wk of 1-16		
Mon.	No School	Mon.	29=73%	Mon.	No School	Mon.	
Tues.	No School	Tues.	27=68%	Tues.	25=63%	Tues.	
Wed.	27=68%	Wed.	Mad Minute Quiz	Wed.	27=68%	Wed.	
Thurs.	29=73%	Thurs.	28=70%	Thurs.		Thurs.	
Fri.	Midterm	Fri.	29=73%	Fri.		Fri.	

Mon.		Mon.		Mon.		Mon.	
Tues.		Tues.		Tues.		Tues.	
Wed.		Wed.		Wed.		Wed.	
Thurs.		Thurs.		Thurs.		Thurs.	
Fri.		Fri.		Fri.		Fri.	

Mon.	Tues.	Wed.	Thurs.	Fri.
Mon.	Tues.	Wed.	Thurs.	Fri.

Week	Average	Parent Signature	Week	Average	Parent Signature
x one	28=70%		six		
x two	28=70%		seven		
÷ three			eight		
four			nine		
five			ten		

Name : _____   Date : _____
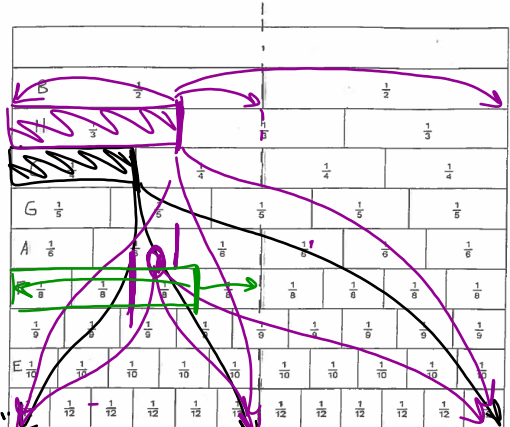

Round to: ○ _____ ½ _____ 1
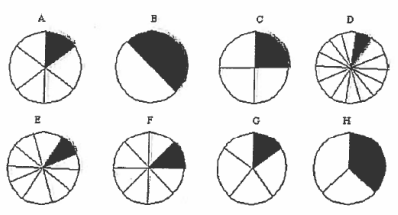
NAME _____ DATE _____ PERIOD ____

Study Guide and Intervention

Rounding Fractions and Mixed Numbers

Use these guidelines to round fractions and mixed numbers to the nearest half.

	Rounding Fractions and Mixed Numbers	Example
Round up	When the numerator is almost as large as the denominator, round up to the next whole number.	$\frac{7}{8}$ rounds to 1.
Round to $\frac{1}{2}$	When the numerator is about half of the denominator, round the fraction to $\frac{1}{2}$.	$4\frac{3}{7}$ rounds to $4\frac{1}{2}$.
Round down	When the numerator is much smaller than the denominator, round down to the previous whole number.	$\frac{1}{5}$ rounds to 0.

EXAMPLE 1 Round $2\frac{3}{8}$ to the nearest half.

The numerator of $\frac{3}{8}$ is about half of the denominator. So, $2\frac{3}{8}$ rounds to $2\frac{1}{2}$.
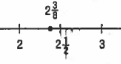
Round up when it is better for a measure to be too large than too small. Round down when it is better for a measure to be too small than too large.

EXAMPLE 2 MUSIC You have $4\frac{1}{2}$ minutes left on a mixed tape you are making for a friend. Should you choose a song that is 5 minutes long or a song that is 4 minutes long?

In order for the entire song to be recorded, you should round down the number of minutes left on the tape and choose the song that is 4 minutes long.

EXERCISES

Round each number to the nearest half.

1. $\frac{2}{5} \approx \frac{1}{2}$ 2. $\frac{1}{18} \downarrow \approx 0$ 3. $\frac{6}{13} \approx \frac{1}{2}$ 4. $6\frac{2}{9} \downarrow \approx 6\frac{0}{9} \approx 6$

5. $5\frac{4}{7} \approx 5\frac{1}{2}$ 6. $8\frac{4}{5} \approx 8+1 \approx 9$ 7. $4\frac{1}{7} \approx 4+0 \approx 4$ 8. $\frac{2}{7} \downarrow \approx 0$

Tell whether each number should be rounded up or down.

9. the weight of a package you are mailing
round up to make sure there is enough postage (stamps) on the package

10. the length of a rug for your bathroom
round down to make sure it fits inside the bathroom

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Lesson 6-1

NAME _____ DATE _____ PERIOD ____

Practice: Word Problems

Rounding Fractions and Mixed Numbers

1. **EXERCISE** Judy walked $6\frac{5}{8}$ miles. To the nearest half mile, how many miles did she walk?

2. **ANIMALS** Maria's hamster weighs $3\frac{4}{9}$ pounds. How many pounds is this to the nearest half pound?

3. **TRAVEL** It is $9\frac{7}{10}$ miles from the library to the school. How many miles is this to the nearest half mile?
It is about $9\frac{1}{2}$ miles from the library to the school.

4. **CARPENTRY** Jan has cut a board to make a shelf. The board is $3\frac{2}{7}$ feet long. How many feet is this to the nearest half foot? $3\frac{1}{2}$

5. **LUMBERING** Pat needs to haul away $1\frac{3}{8}$ tons of wood from the lot. The maximum weight his pickup truck is supposed to carry is 1 ton. How many trips should Pat make to haul all the wood away? Explain.

6. **CLOTHING** Mandy is making table place mats that will take $2\frac{1}{4}$ yards of cloth. If cloth is sold in half yards, how many yards of cloth will Mandy need to buy? Explain. $2\frac{1}{2}$
Mandy will need to buy $2\frac{1}{2}$ yds of cloth because she wants to have enough cloth to make the place mats.

7. **EXERCISE** Julien is preparing for a 5-mile race. He can choose from a $4\frac{7}{8}$-mile course to train on or a $5\frac{2}{5}$-mile course. Which course should he choose? Explain.   *round up*
Julien should choose the $5\frac{2}{5}$ mile course to make sure he is prepared and does not tire out before the end of the race.

8. **CRAFTS** Marisa wants to glue her $6\frac{1}{4}$-inch by $8\frac{4}{5}$-inch painting onto foam backing. The foam backing comes in sheets that are 6 inches by 9 inches or 7 inches by 9 inches. Which sheet of foam should Marisa buy? Explain.

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Lesson 6-1

NAME _____ DATE _____ PERIOD ____

6-2 Study Guide and Intervention
Estimating Sums and Differences

Round fractions to the nearest half to estimate sums and differences.

EXAMPLE 1 Estimate $\frac{2}{5} + \frac{9}{10}$.

$\frac{2}{5}$ rounds to $\frac{1}{2}$.

$\frac{9}{10}$ rounds to 1.

$\frac{2}{5} + \frac{9}{10}$ is about $\frac{1}{2} + 1$ or $1\frac{1}{2}$.

EXAMPLE 2 Estimate $\frac{3}{8} - \frac{1}{4}$.

$\frac{3}{8}$ rounds to $\frac{1}{2}$.

$\frac{1}{4}$ rounds to 0.

$\frac{3}{8} - \frac{1}{4}$ is about $\frac{1}{2} - 0$ or $\frac{1}{2}$.

Round mixed numbers to the nearest whole number to estimate sums and differences. When you have a fraction and a mixed number, round in the manner that makes the most sense.

EXAMPLE 3 Estimate $8\frac{1}{7} + 6\frac{1}{5}$.

$8\frac{1}{7}$ rounds to 8.

$6\frac{1}{5}$ rounds to 6.

$8\frac{1}{7} + 6\frac{1}{5}$ is about $8 + 6$ or 14.

EXAMPLE 4 Estimate $3\frac{5}{8} - \frac{2}{5}$.

$3\frac{5}{8}$ rounds to $3\frac{1}{2}$.

$\frac{2}{5}$ rounds to $\frac{1}{2}$.

$3\frac{5}{8} - \frac{2}{5}$ is about $3\frac{1}{2} - \frac{1}{2}$ or 3.

EXERCISES

Estimate.

1. $\frac{9}{11} + \frac{3}{8}$ *[handwritten: 3·2=6, ≈ 1 + ½ → 1½]*

2. $\frac{5}{8} - \frac{1}{9}$ *[handwritten: 5·2=10, ≈ ½ − 0 → ½]*

3. $\frac{3}{10} + \frac{3}{5}$ *[handwritten: 3·2=6, 3·2=6, ≈ ½ + ½ → 1]*

4. $\frac{7}{8} + \frac{3}{4}$

5. $1\frac{5}{8} + 6\frac{2}{7}$

6. $4\frac{5}{6} - 2\frac{1}{4}$ *[handwritten: ≈ 4 − 2 → 2]*

7. $6\frac{5}{11} - 2\frac{5}{6}$ *[handwritten: ≈ 6 − 3 → 3]*

8. $4\frac{?}{?} + 3\frac{?}{?}$ *[handwritten: ≈ 4 + 3 → 7]*

9. $3\frac{5}{8} - \frac{3}{7}$

10. $6\frac{3}{8} + \frac{2}{5}$ *[handwritten: ≈ 6½ + ½ → 6 2/2, 6+1, 7]*

11. $5\frac{5}{11} - \frac{4}{9}$

12. $1\frac{5}{9} - \frac{4}{9}$

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6-2 Practice: Word Problems
Estimating Sums and Differences

CLOTHING For Exercises 1–4, use the table. It shows articles of clothing and the yardage of cloth needed to make them.

Amount of Cloth Needed to Make Clothing	
Article of Clothing	Amount of Cloth (yards)
Bandana	$\frac{1}{3}$
Vest	$\frac{7}{8}$
Pants	$4\frac{1}{5}$
Shirt	$3\frac{3}{8}$
Jacket	$6\frac{4}{9}$

1. Jan wants to make a bandana and a vest from the same cloth. About how many yards of cloth will she need? *[handwritten: 7/8]*

2. About how much more cloth will a vest need than a bandana? *[handwritten: 1/3]*

[handwritten: $\frac{7}{8} - \frac{1}{3}$ ≈ 1 − ½ → ½]

3. Gloria wants to make pants and a matching shirt from the same cloth. About how much cloth will she need?

[handwritten: $4\frac{1}{5} + 3\frac{3}{8}$, 5 + 4 ≈ 9 yards]

4. Sam is trying to decide whether to make a jacket or a shirt. About how much more cloth would he need to buy for a jacket than for a shirt?

[handwritten: $6\frac{4}{9} - 3\frac{3}{8}$ ≈ 6 − 3 → 3]

5. **GARDENING** Juan is building a fence around a triangular garden. About how much fencing should he buy to be sure he has enough?

[handwritten: $2\frac{3}{8}$ ft ≈ 3, $3\frac{7}{8}$ ft ≈ 4, $5\frac{5}{8}$ ft ≈ 6, ≈ 3+4+6 ≈ 13 feet]

6. **GARDENING** Refer to the drawing in Exercise 5. About how much longer is the longest side of the garden than the shortest side, to the nearest whole number?

[handwritten: longest − shortest, $5\frac{1}{8} - 2\frac{3}{8}$ ≈ 5 − 2 ≈ 3 ft]

[handwritten: Juan would need to buy about 13 ft of fencing to put around his garden.]

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Study Guide and Intervention

Adding and Subtracting Fractions with Like Denominators

Fractions with the same denominator are called **like fractions**.
- To add like fractions, add the numerators. Use the same denominator in the sum.
- To subtract like fractions, subtract the numerators. Use the same denominator in the difference.

EXAMPLE 1 Find the sum of $\frac{3}{5}$ and $\frac{3}{5}$.

Estimate $\frac{1}{2} + \frac{1}{2} = 1$

$\frac{3}{5} + \frac{3}{5} = \frac{3+3}{5}$ Add the numerators.

$= \frac{6}{5}$ Simplify.

$= 1\frac{1}{5}$ Write the improper fraction as a mixed number.

Compared to the estimate, the answer is reasonable.

EXAMPLE 2 Find the difference of $\frac{3}{4}$ and $\frac{1}{4}$.

Estimate $1 - 0 = 1$

$\frac{3}{4} - \frac{1}{4} = \frac{3-1}{4}$ Subtract the numerators.

$= \frac{2}{4}$ or $\frac{1}{2}$ Simplify.

Compared to the estimate, the answer is reasonable.
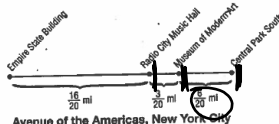
EXERCISES

Add or subtract. Write in simplest form.

1. $\frac{1}{9} + \frac{4}{9} = \frac{1+4}{9}$ $\boxed{\frac{5}{9}}$

2. $\frac{9}{11} - \frac{7}{11} = \frac{9-7}{11} = \boxed{\frac{2}{11}}$

3. $\frac{9}{10} + \frac{5}{10} = \frac{9+5}{10}$ $\frac{14}{10} = 10\overline{)14}$

4. $\frac{11}{12} - \frac{9}{12} = \frac{2}{12} \div 2 = \frac{1}{6}$ → $\boxed{\frac{2}{3}}$

5. $\frac{4}{7} + \frac{5}{7}$ $\frac{7+5}{8} = \frac{12}{8} = 8\overline{)12}$

6. $\frac{4}{9} - \frac{1}{9}$

7. $\frac{7}{8} + \frac{5}{8}$

8. $\frac{6}{7} - \frac{4}{7}$ $\frac{4 \div 4}{8 \div 4} = \boxed{\frac{1}{2}}$

9. $\frac{3}{4} + \frac{3}{4}$

10. $\frac{4}{5} - \frac{1}{5}$ $\frac{4-1}{5}$ $\boxed{\frac{3}{5}}$

11. $\frac{5}{6} + \frac{1}{6}$ $\frac{5+1}{6} = \frac{6 \div 3}{6 \div 3}$ $\frac{2 \div 2}{2 \div 2}$ $\frac{1}{1} = \boxed{1}$

12. $\frac{7}{10} - \frac{1}{10}$ $\frac{7-1}{10} = \frac{6 \div 2}{10 \div 2} = \boxed{\frac{3}{5}}$

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Lesson 6-3

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Practice: Word Problems

Adding and Subtracting Fractions with Like Denominators

MAPS For Exercises 1–3, use the drawing at the right that shows distances between major sites on the Avenue of the Americas in New York City.

Empire State Building   Radio City Music Hall   Museum of Modern Art   Central Park South

$\frac{16}{20}$ mi $\frac{3}{20}$ mi $\frac{6}{20}$ mi

Avenue of the Americas, New York City

1. Carla walked from the Empire State Building to the Museum of Modern Art. How far did she walk?

2. Julie walked from Central Park South to the Museum of Modern Art. Jolene walked from Radio City Music Hall to the Museum. How much farther did Julie walk than Jolene?

$\frac{6}{20}$ mi $\frac{3}{20}$

$\frac{6}{20} - \frac{3}{20} = \frac{3}{20}$ miles

Julie walked $\frac{3}{20}$ miles farther than Jolene.

3. Dion walked from Central Park South to the Empire State Building. How far did he walk?

$\frac{16}{20} + \frac{3}{20} + \frac{6}{20} = \frac{25}{20}$

$\frac{25 \div 5}{20 \div 5}$ $\frac{5}{4}$ $20\overline{)25}$ -20 5

$1\frac{5}{20} = 1\frac{1}{4}$ miles $\frac{5 \div 5}{20 \div 5} = 1\frac{1}{4}$ miles

$6\,4\overline{)5}$ -4 1

4. **COOKING** Tiffany made a glass of punch from fruit juice concentrate. She used $\frac{1}{4}$ cup concentrate and $\frac{3}{4}$ cup water. How much more water than concentrate did Tiffany use?

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

Tiffany used $\frac{1}{2}$ cup more water than concentrate.

5. **ART** Beng is creating a painting. He has $\frac{5}{6}$ of a tube of red paint and $\frac{3}{6}$ of a tube of green paint. How much more red paint does he have than green paint?

6. **CONSTRUCTION** Mr. Hayashi is repairing his sidewalk. He mixed $\frac{5}{9}$ pound of cement with sand and water to make concrete. The next day he mixed $\frac{7}{9}$ pound of cement with sand and water. How many pounds of cement altogether did Mr. Hayashi use?

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Lesson 6-3

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LESSON 5-2   **Review for Mastery**
Adding and Subtracting with Unlike Denominators

Unlike fractions have different denominators. To add and subtract fractions, you must have a common denominator. The least common denominator (LCD) is the least common multiple of the denominators.

To add or subtract unlike fractions, first find the LCD of the fractions.

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

Multiples of 4: 4, 8, **12**, ...
Multiples of 3: 3, 6, 9, **12**, ...
The LCD is 12.

$1\begin{vmatrix} 3 & 4 \\ \hline 3 \cdot 4 \end{vmatrix} = 12$
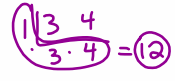
Next, use fraction strips to find equivalent fractions.
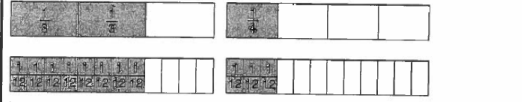
Then use fraction strips to find the sum or difference.

$\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$

So, $\frac{2}{3} + \frac{1}{4} = \frac{11}{12}$.

Use fraction strips to find each sum or difference. Write your answer in simplest form.

1. $\frac{1}{4} + \frac{1}{8}$ 2. $\frac{5}{6} - \frac{2}{3}$ 3. $\frac{3}{4} - \frac{1}{3}$ 4. $\frac{3}{5} + \frac{3}{10}$

see notes

5. $\frac{3}{4} + \frac{1}{6}$ 6. $\frac{1}{2} + \frac{3}{8}$ 7. $\frac{2}{3} - \frac{1}{6}$ 8. $\frac{1}{3} - \frac{1}{4}$
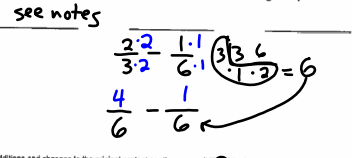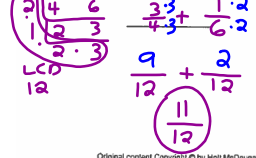
$\begin{vmatrix} 2 & 4 & 6 \\ 1 & 2 & 3 \end{vmatrix}$
$2 \cdot 3$
LCD 12

$\frac{3 \cdot 3}{4 \cdot 3} + \frac{1 \cdot 2}{6 \cdot 2}$ *see notes*

$\frac{9}{12} + \frac{2}{12}$

$\boxed{\frac{11}{12}}$

$\frac{2 \cdot 2}{3 \cdot 2} - \frac{1 \cdot 1}{6 \cdot 1}$ $\begin{vmatrix} 3 & 6 \\ 1 \cdot 2 \end{vmatrix} = 6$

$\frac{4}{6} - \frac{1}{6}$

$\frac{3 \div 3}{6 \div 3} = \boxed{\frac{1}{2}}$

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1) $\frac{1 \cdot 2}{4 \cdot 2} + \frac{1 \cdot 1}{8 \cdot 1}$ $\begin{vmatrix} 4 & 4 & 8 \\ 1 & 1 & 2 \\ 1 \cdot 2 \end{vmatrix}$ LCD $= 8$

$\frac{2}{8} + \frac{1}{8}$

$\boxed{\frac{3}{8}}$

6)

$$\frac{1\cdot4}{2\cdot4} + \frac{3\cdot1}{8\cdot1}$$

$$\frac{4}{8} + \frac{3}{8}$$

$$\boxed{\frac{7}{8}}$$

$$2\overline{)\,2\quad 8}$$
$$\cdot 1 \cdot 4 = \begin{array}{c}LCD\\8\end{array}$$

Practice: Word Problems

Adding and Subtracting Fractions with Unlike Denominators

BUSINESS For Exercises 1–4, use the table below. It lists the fractions of United States car sales held by several companies in 2001.

Leading Car Sales in U.S. in 2001	
Company	Fraction of Sales
Company A	$\frac{1}{5}$
Company B	$\frac{4}{25}$
Company C	$\frac{2}{5}$
Company D	$\frac{3}{20}$

1. What fraction of the U.S. sales did Company C and Company B hold together?

2. How much greater was the fraction of the market of Company A than of Company D?

3. How much more than Company A's fraction of the market did Company C have?

$$\frac{\overset{C}{2}}{5} - \frac{\overset{A}{1}}{5} = \frac{1}{5}$$

Company C had $\frac{1}{5}$ more of the market than Company A.

4. Find the total fraction of the market that Company D and Company B hold together. +

$$\frac{3\cdot5}{20\cdot5} + \frac{4\cdot4}{25\cdot4}$$

$$5\overline{)\,20\quad 25}$$
$$\begin{array}{c}4\quad 5\end{array}$$
$$4\cdot5$$
$$\overline{100}\;LCD$$

$$\frac{15}{100} + \frac{16}{100} = \frac{31}{100}$$

5. TRAVEL Gabriella's travel shampoo bottle holds $\frac{1}{2}$ cup of shampoo. Before leaving on vacation, she filled the bottle to the top with $\frac{1}{8}$ cup of shampoo. How much shampoo was already in the bottle?

6. EXERCISE Bill and Andy were racing to see who could run the farthest in 5 minutes. Bill ran $\frac{5}{8}$ of a mile, and Andy ran $\frac{3}{4}$ of a mile. How much farther did Andy run than Bill?

$$\frac{3\cdot2}{4\cdot2} - \frac{5\cdot1}{8\cdot1}$$

$$\frac{6}{8} - \frac{5}{8}$$

$$\frac{1}{8}$$

$$2\overline{)\,4\quad 8}$$
$$2\overline{)\,2\quad 4}$$
$$\cdot1\cdot2$$
$$\begin{array}{c}LCD\\8\end{array}$$

Andy ran $\frac{1}{8}$ miles farther than Bill.

Total → $\frac{1}{2}$ cup

$$\frac{1\cdot4}{2\cdot4} - \frac{1\cdot1}{8\cdot1}$$

$$\begin{array}{c}?\end{array}\;\frac{4}{8} - \frac{1}{8}$$

There were $\frac{3}{8}$ cups of shampoo alredy in the bottle.

Name_____ Date _____ Class _____

LESSON 5-3
Review for Mastery
Adding and Subtracting Mixed Numbers

You can use what you know about improper fractions to add and subtract mixed numbers.

To find the sum or difference of mixed numbers, first write the mixed numbers as improper fractions.

A. $3\frac{1}{4} + 2\frac{1}{3}$　　　　　　　　　　　B. $4\frac{1}{2} - 2\frac{2}{3}$

$= \frac{13}{4} + \frac{7}{3}$　　　　　　　　　　　　$= \frac{9}{2} - \frac{8}{3}$

Next, find equivalent fractions with a least common denominator.

$\frac{13}{4} + \frac{7}{3}$　　　　　　　　　　　　$\frac{9}{2} - \frac{8}{3}$

$= \frac{39}{12} + \frac{28}{12}$　　　　　　　　　　$= \frac{27}{6} - \frac{16}{6}$

Then add or subtract the like fractions.

$\frac{39}{12} + \frac{28}{12}$　　　　　　　　　　$\frac{27}{6} - \frac{16}{6}$

$= \frac{67}{12}$　　　　　　　　　　　　　$= \frac{11}{6}$

Write the answer as a mixed number in simplest form.

$\frac{67}{12}$　　　　　　　　　　　　　$\frac{11}{6}$

$= 5\frac{7}{12}$　　　　　　　　　　　　$= 1\frac{5}{6}$

So, $3\frac{1}{4} + 2\frac{1}{3} = 5\frac{7}{12}$.　　　　　　So, $4\frac{1}{2} - 2\frac{2}{3} = 1\frac{5}{6}$.

Find each sum or difference. Write your answer in simplest form.

1. $1\frac{1}{4} + 1\frac{1}{2}$　　2. $3\frac{1}{6} + 1\frac{2}{3}$　　3. $2\frac{1}{8} + 4\frac{1}{2}$　　4. $4\frac{1}{3} + 1\frac{1}{2}$

5. $2\frac{3}{5} + 1\frac{1}{10}$　　6. $3\frac{1}{6} - 1\frac{1}{12}$　　7. $2\frac{3}{8} - 1\frac{1}{4}$　　8. $5\frac{2}{3} - 2\frac{1}{4}$

(Handwritten work on the worksheet:)

1. $1\frac{1}{4} = 1\frac{1\cdot1}{4\cdot1}$; $1\frac{1}{2} = 1\frac{2}{4}$; $= \frac{5\cdot1}{4\cdot1} + \frac{3\cdot2}{2\cdot2} = \frac{5}{4} + \frac{6}{4} = \frac{11}{4} = 2\frac{3}{4}$

2. $= \frac{?}{6} + \frac{?}{3} = \frac{?}{6} + \frac{?}{6}$

3. $= \frac{17}{8} + \frac{9\cdot4}{2\cdot4} = \frac{17}{8} + \frac{36}{8} = \frac{53}{8} = 6\frac{5}{8}$

4. $= \frac{?}{3} + \frac{?}{2} = \frac{?}{6} + \frac{?}{6}$

6. $3\frac{2}{12} + 1\frac{1}{12}$; $4\frac{3÷3}{12÷3}$; $4\frac{1}{4}$

8. $\frac{68}{12} - \frac{27}{12} = \frac{41}{12} = 3\frac{5}{12}$　see notes

(Handwritten problem at bottom of page:)

8) $5\frac{2\cdot4}{3\cdot4} = 5\frac{8}{12}$

$- 2\frac{1\cdot3}{4\cdot3} = 2\frac{3}{12}$

$3\frac{5}{12}$

NAME _____ DATE _____ PERIOD _____

Practice: Word Problems
Adding and Subtracting Mixed Numbers

Solve. Write answers in simplest form.

1. **SCHOOL** Liwanu spent $2\frac{2}{5}$ hours on his math homework and $1\frac{3}{5}$ hours on his science homework. How much time did he spend doing math and science homework?

2. **FARMING** Mr. Garcia planted $4\frac{7}{8}$ acres of wheat and $1\frac{6}{8}$ acres of corn. How much more wheat did he plant than corn?

3. **COOKING** Trey wants to make biscuits and muffins. He needs $2\frac{1}{4}$ cups of flour for the biscuits and $1\frac{5}{8}$ cups of flour for the muffins. How much flour does Trey need altogether?

4. **COOKING** Gina wants to make muffins. The recipe for blueberry muffins calls for $2\frac{3}{4}$ cups of flour. The recipe for cornmeal muffins calls for $1\frac{1}{8}$ cups of flour. How many more cups of flour would Gina need for blueberry muffins than corn muffins?

5. **WEIGHT** Crystal's baby brother weighed $7\frac{1}{2}$ pounds at birth. After one month, her brother weighed $8\frac{4}{8}$ pounds. How much weight did the baby gain?

6. **BOOKS** Kyle read $3\frac{5}{8}$ books and Jan read $2\frac{1}{8}$ books. How many more books did Kyle read than Jan?

7. **ANIMALS** The average length of a Rufous hummingbird is $3\frac{1}{2}$ inches. The average length of a Broad-tailed hummingbird is $4\frac{1}{2}$ inches. How much shorter is the Rufous hummingbird?

8. **RECYCLING** The class collected $9\frac{5}{7}$ pounds of glass bottles and $6\frac{1}{2}$ pounds of aluminum cans. How many pounds of glass and aluminum did the class collect in all?

Handwritten work:

$4\frac{1}{2} - 3\frac{1}{2} = 1\frac{0}{2} = 1$ in

The Rufous hummingbird is 1 inch shorter than the Broad-tailed hummingbird.

$9\frac{5}{7} + 6\frac{1}{2}$

$9\frac{5 \cdot 2}{7 \cdot 2} + 6\frac{1 \cdot 7}{2 \cdot 7}$

LCD 14

$9\frac{10}{14} + 6\frac{7}{14}$

$15\frac{17}{14}$

$14\overline{)17} = 1\frac{3}{14} = 16\frac{3}{14}$

$\frac{68 \cdot 2}{7 \cdot 2}$ $\frac{13 \cdot 7}{2 \cdot 7}$

$\frac{136}{14} + \frac{91}{14}$

$\frac{68}{\times 2} = 136$

$\frac{13}{\times 7} = 91$

$\frac{136}{+ 91}$ / 227

$\frac{227}{14} = 14\overline{)227}$

$16\frac{3}{14}$

Name_____ Date _____ Class _____

LESSON 5-4
Review for Mastery
Regrouping to Subtract Mixed Numbers

You can use fraction strips to regroup and subtract mixed numbers.

To find $3\frac{1}{4} - 1\frac{3}{4}$, first model the first mixed number in the expression.

| 1 | 1 | 1 | $\frac{1}{4}$ |

There are not enough $\frac{1}{4}$ pieces to subtract, so you have to regroup.

Trade one one-whole strip for four $\frac{1}{4}$ pieces, because $\frac{4}{4} = 1$.

| 1 | 1 | $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ | $\frac{1}{4}$ |

Now there are enough $\frac{1}{4}$ pieces to subtract. Take away $1\frac{3}{4}$.

| 1 | 1 | $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ | $\frac{1}{4}$ |

The remaining pieces represent the difference. Write the difference in simplest form.

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

Use fraction strips to find each difference. Write your answer in simplest form.

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

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

3. $3\frac{11}{8} - 1\frac{7}{8} = \frac{4 \div 4}{8 \div 4} = 2\frac{2}{3}$ $3\frac{1}{3} - 2\frac{2}{3}$

5. $5\frac{5}{12} - 2\frac{7}{12}$

6. $3\frac{3}{10} - 1\frac{9}{10}$

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

8. $4 - 1\frac{1}{3}$ see notes

9. $3\frac{1}{8} - 1\frac{3}{8}$

10. $2\frac{1}{8} - 1\frac{7}{8}$

11. $3 - 1\frac{1}{4}$

12. $6\frac{3}{8} - 2\frac{5}{8}$

8)

$$3\; 4\; \frac{\cancel{5}^3}{3}\cancel{2}+$$

$$-\; 1\; \frac{1}{3}$$

$$\boxed{2\; \frac{2}{3}}$$

Practice: Word Problems

Subtracting Mixed Numbers with Renaming

Solve. Write in simplest form.

1. EXERCISE Seth has already walked $\frac{5}{8}$ miles. It takes $1\frac{3}{8}$ miles to get to school. How much further does he have to go?

2. COOKING Aviva needs fresh lemon juice to make cheesecake. She bought 2 lemons but needed only $1\frac{1}{4}$ lemons for the amount of juice she needs. How much lemon does she have left over?

3. WORK In 2000, 17 million workdays were lost due to strikes and labor disputes. In 2001, there were only $1\frac{1}{5}$ million days lost. How many more workdays were lost in 2000?

$$16\; \frac{5^{\text{of}}}{17\frac{\cancel{0}}{5}}- \; 1\;\frac{1}{5} = 15\frac{4}{5}$$

$15\frac{4}{5}$ million more workdays were lost in 2000 due to strikes and labor disputes.

4. TRAVEL It usually takes Amalie $1\frac{3}{4}$ hours to get to her aunt's house. Due to Thanksgiving traffic, this year it took $3\frac{1}{3}$ hours. How much longer did it take this year?

$$3\frac{1\cdot4}{3\cdot4}- \; 1\frac{3\cdot3}{4\cdot3}$$

$$2\;3\frac{4}{3}\cdot\frac{16}{12}- \; 1\frac{9}{12} = 1\frac{7}{12}\text{hours}$$

It took Amalie $1\frac{7}{12}$ hours longer this year to get to her Aunt's house.

5. CARS A 2002 SUV can accelerate from 0 to 60 mph in $10\frac{59}{100}$ seconds. A sports car takes $9\frac{86}{100}$ seconds to get from 0 to 60 mph. How much faster does the sports car get to 60 mph?

$$9\;\frac{5^{\cancel{\,}}}{10\frac{\cancel{59}}{100}}- \; 9\frac{86}{100}$$

$$\frac{\cancel{0}159}{-\;\;86}{\;\;\;73}$$

$$\frac{73}{100}\text{seconds}$$

The sports car gets to 60mph in $\frac{73}{100}$ seconds faster than the SUV.

6. SCULPTURE Jose has $8\frac{1}{2}$ cups of Plaster of Paris powder. If Jose uses $5\frac{9}{6}$ cups for a sculpture, how much plaster will he have left?