NAME _____

Lesson 1 Subtraction (like denominators)

Study how to subtract when fractions have the same denominator.

Subtract the numerators.

$$\frac{7}{8} - \frac{5}{8} = \frac{7-5}{8} = \frac{2}{8} = \frac{1}{4}$$

Use the same denominator.

Change to simplest form.

Subtract the numerators.

$$\begin{array}{r} 7 \\ \hline 8 \\ -\,5 \\ \hline 8 \end{array}$$

Use the same denominator.

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

Change to simplest form.

Write each answer in simplest form.

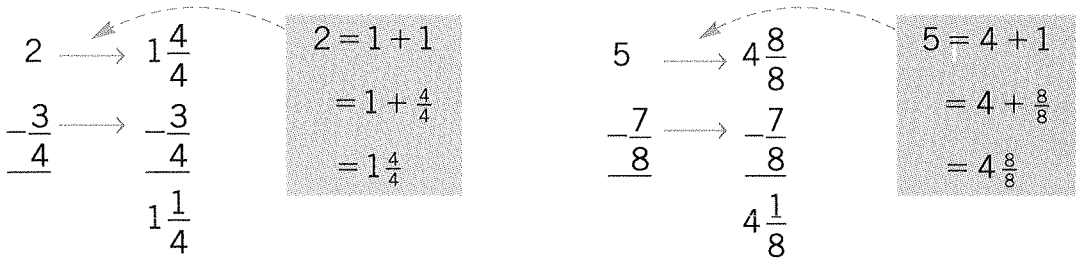
	a	*b*	*c*	*d*	*e*
1.	$\begin{array}{r} 5 \\ \hline 9 \\ -\,4 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ \hline 5 \\ -\,1 \\ \hline 5 \end{array}$	$\begin{array}{r} 8 \\ \hline 9 \\ -\,4 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ \hline 4 \\ -\,1 \\ \hline 4 \end{array}$	$\begin{array}{r} 5 \\ \hline 6 \\ -\,1 \\ \hline 6 \end{array}$
2.	$\begin{array}{r} 6 \\ \hline 7 \\ -\,4 \\ \hline 7 \end{array}$	$\begin{array}{r} 5 \\ \hline 8 \\ -\,3 \\ \hline 8 \end{array}$	$\begin{array}{r} 9 \\ \hline 10 \\ -\,3 \\ \hline 10 \end{array}$	$\begin{array}{r} 2 \\ \hline 5 \\ -\,1 \\ \hline 5 \end{array}$	$\begin{array}{r} 5 \\ \hline 9 \\ -\,1 \\ \hline 9 \end{array}$
3.	$\begin{array}{r} 5 \\ \hline 7 \\ -\,2 \\ \hline 7 \end{array}$	$\begin{array}{r} 8 \\ \hline 9 \\ -\,1 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ \hline 8 \\ -\,3 \\ \hline 8 \end{array}$	$\begin{array}{r} 7 \\ \hline 12 \\ -\,5 \\ \hline 12 \end{array}$	$\begin{array}{r} 9 \\ \hline 10 \\ -\,7 \\ \hline 10 \end{array}$
4.	$\begin{array}{r} 4 \\ \hline 5 \\ -\,2 \\ \hline 5 \end{array}$	$\begin{array}{r} 2 \\ \hline 3 \\ -\,1 \\ \hline 3 \end{array}$	$\begin{array}{r} 7 \\ \hline 10 \\ -\,3 \\ \hline 10 \end{array}$	$\begin{array}{r} 7 \\ \hline 9 \\ -\,4 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ \hline 8 \\ -\,1 \\ \hline 8 \end{array}$

CHAPTER 13

NAME _____

Lesson 2 Subtraction (from whole numbers)

Rename the whole number as a mixed numeral so the denominator is the same as that of the fraction.



Write each answer in simplest form.

	a	*b*	*c*	*d*
1.	$2 - \frac{1}{4}$	$3 - \frac{2}{3}$	$6 - \frac{1}{5}$	$5 - \frac{1}{3}$
2.	$4 - \frac{3}{4}$	$5 - \frac{2}{5}$	$4 - \frac{2}{5}$	$6 - \frac{5}{6}$
3.	$1 - \frac{1}{2}$	$2 - \frac{7}{8}$	$1 - \frac{1}{8}$	$2 - \frac{3}{10}$

NAME _____

Lesson 3 Subtraction (mixed numerals)

$\frac{1}{4}$ is less than $\frac{3}{4}$. So rename $7\frac{1}{4}$ as shown so you can subtract the fractions.

$$7\frac{1}{4} \rightarrow 6\frac{5}{4}$$
$$-1\frac{3}{4} \rightarrow -1\frac{3}{4}$$
$$5\frac{2}{4} = 5\frac{1}{2}$$

Change to simplest form.

$$7\tfrac{1}{4} = 6 + 1 + \tfrac{1}{4}$$
$$= 6 + \tfrac{4}{4} + \tfrac{1}{4}$$
$$= 6\tfrac{5}{4}$$

$\frac{1}{3}$ is less than $\frac{2}{3}$. So rename $3\frac{1}{3}$ as shown so you can subtract the fractions.

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

$$3\tfrac{1}{3} = 2 + 1 + \tfrac{1}{3}$$
$$= 2 + \tfrac{3}{3} + \tfrac{1}{3}$$
$$= 2\tfrac{4}{3}$$

Write each answer in simplest form.

	a	*b*	*c*	*d*
1.	$5\frac{8}{9}$ $-2\frac{6}{9}$	$4\frac{6}{7}$ $-2\frac{1}{7}$	$8\frac{9}{10}$ $-3\frac{4}{10}$	$6\frac{3}{8}$ $-2\frac{1}{8}$
2.	$5\frac{1}{3}$ $-1\frac{2}{3}$	$7\frac{2}{5}$ $-1\frac{4}{5}$	$8\frac{3}{8}$ $-2\frac{5}{8}$	$6\frac{1}{9}$ $-2\frac{6}{9}$
3.	$5\frac{3}{12}$ $-2\frac{11}{12}$	$4\frac{5}{6}$ $-2\frac{2}{6}$	$3\frac{2}{5}$ $-1\frac{4}{5}$	$7\frac{2}{3}$ $-6\frac{2}{3}$

CHAPTER 13

Lesson 3 Problem Solving

Solve. Write each answer in simplest form.

1. Hank's workday is 9 h long. His lunch and breaks total $1\frac{1}{2}$ h. How many hours is Hank actually working per day?

Hank is actually working _____ h per day.

2. Sue says it will take $6\frac{1}{6}$ h to travel to her grandparents' home. She has been travelling $3\frac{5}{6}$ h. How much longer will it be before she gets there?

It will be _____ h longer.

3. Don ran 5 laps yesterday and $3\frac{1}{2}$ laps today. How many more laps did Don run yesterday than today?

Don ran _____ laps more yesterday.

4. FloTime stock was $\$29\frac{1}{2}$ yesterday and \$27 today. By how much did the stock price go down?

The stock price went down \$ _____.

5. This year Reola spends $5\frac{1}{4}$ h in school each day. Last year she spent $4\frac{3}{4}$ h in school each day. How many more hours does she spend in school each day this year than last year?

She spends _____ h more in school each day this year than last year.

6. A wire is $4\frac{7}{12}$ m long. Suppose $\frac{11}{12}$ m of wire is used. How much wire would be left?

_____ m of wire would be left.

1.	2.
3.	4.
5.	6.

NAME _____

Lesson 4 Subtraction (unlike denominators)

When subtracting fractions that have different denominators, rename the fractions so they have the same denominator.

$$\begin{array}{r} \frac{2}{3} \times \frac{4}{4} = \frac{8}{12} \\ -\frac{1}{4} \times \frac{3}{3} = -\frac{3}{12} \\ \hline \frac{5}{12} \end{array}$$

Since $3 \times 4 = 12$, rename each fraction with a denominator of 12. Then subtract.

$$\begin{array}{r} \frac{5}{6} \longrightarrow \frac{5}{6} \\ -\frac{1}{2} \times \frac{3}{3} = -\frac{3}{6} \\ \hline \frac{2}{6} = \frac{1}{3} \end{array}$$

Since $2 \times 3 = 6$, rename only $\frac{1}{2}$ with a denominator of 6. Then subtract.

Write each answer in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{3}{5} - \frac{1}{3}$	$\frac{5}{6} - \frac{2}{5}$	$\frac{7}{8} - \frac{1}{2}$	$\frac{2}{3} - \frac{4}{9}$
2.	$\frac{5}{6} - \frac{1}{3}$	$\frac{2}{3} - \frac{1}{6}$	$\frac{7}{12} - \frac{1}{4}$	$\frac{4}{5} - \frac{3}{10}$
3.	$\frac{9}{10} - \frac{1}{2}$	$\frac{5}{6} - \frac{3}{7}$	$\frac{3}{4} - \frac{1}{5}$	$\frac{11}{12} - \frac{1}{6}$

CHAPTER 13

Lesson 4 Problem Solving

Solve. Write each answer in simplest form.

1. Phillip jogged $\frac{5}{6}$ of a block. He walked $\frac{1}{2}$ of a block. How much farther did he jog than he walked?

He jogged _____ of a block farther than he walked.

1.

2. Kyle and Eric have painted $\frac{2}{3}$ of a room. Kyle painted $\frac{1}{2}$ of the room. How much of the room did Eric paint?

Eric painted _____ of the room.

2.

3. Rona and Joan have $\frac{5}{6}$ of a room painted. Joan painted $\frac{1}{5}$ of the room. How much of the room did Rona paint?

Rona painted _____ of the room.

3.

4. Ardith had $\frac{3}{4}$ of a carton of eggs. She used $\frac{7}{12}$ of a carton for breakfast. How much of a carton does she have left?

She has _____ of a carton of eggs left.

4.

5. Barb ran $\frac{9}{16}$ of a lap of the track. Jim ran $\frac{1}{4}$ of a lap of the track. How much more of a lap did Barb run than Jim?

Barb ran _____ of a lap more than Jim.

5.

6. It takes Monica $\frac{5}{6}$ h to get to work. In doing so, she rides the train $\frac{2}{3}$ h. She walks the remaining time. How much time does she spend walking to work?

She spends _____ h walking to work.

6.

7. Mr. Anthony and Mr. Androtti completed $\frac{3}{4}$ of a job. Mr. Androtti completed $\frac{2}{9}$ of the job. What part of the job did Mr. Anthony complete?

Mr. Anthony completed _____ of the job.

7.

NAME _____

Lesson 5 Subtraction (unlike denominators)

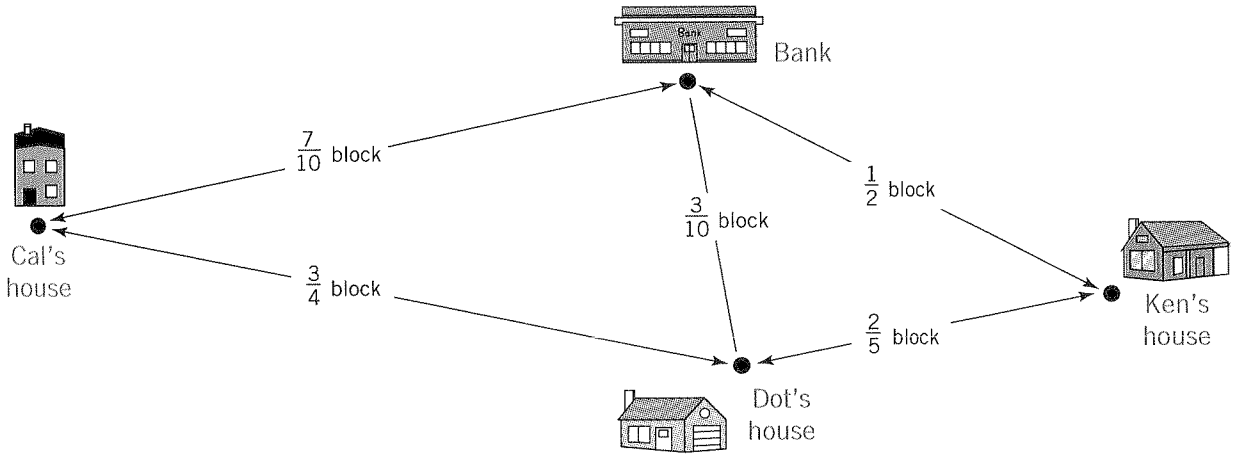
$$\begin{array}{r} \frac{3}{4} \\ -\frac{3}{5} \\ \hline \end{array} \begin{array}{c} \longrightarrow \\ \longrightarrow \\ \\ \end{array} \begin{array}{r} \frac{15}{20} \\ -\frac{12}{20} \\ \hline \frac{3}{20} \end{array} \qquad \begin{array}{r} \frac{9}{10} \\ -\frac{11}{15} \\ \hline \end{array} \begin{array}{c} \longrightarrow \\ \longrightarrow \\ \\ \end{array} \begin{array}{r} \frac{27}{30} \\ -\frac{22}{30} \\ \hline \frac{5}{30} = \frac{1}{6} \end{array}$$

Write each answer in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{5}{6} - \frac{3}{8}$	$\frac{3}{4} - \frac{1}{6}$	$\frac{7}{8} - \frac{3}{10}$	$\frac{5}{6} - \frac{2}{9}$
2.	$\frac{9}{10} - \frac{3}{5}$	$\frac{7}{8} - \frac{1}{6}$	$\frac{2}{3} - \frac{1}{5}$	$\frac{8}{9} - \frac{5}{6}$
3.	$\frac{3}{4} - \frac{5}{12}$	$\frac{7}{12} - \frac{1}{4}$	$\frac{7}{8} - \frac{1}{3}$	$\frac{3}{10} - \frac{1}{4}$
4.	$\frac{2}{3} - \frac{4}{9}$	$\frac{11}{12} - \frac{3}{8}$	$\frac{1}{4} - \frac{1}{12}$	$\frac{2}{3} - \frac{7}{12}$

CHAPTER 13

Lesson 5 Problem Solving



Solve. Write each answer in simplest form.

1. Who lives farther from the bank, Cal or Dot? How much farther?

_____ lives _____ of a block farther.

1.

2. Who lives farther from the bank, Ken or Cal? How much farther?

_____ lives _____ of a block farther.

2.

3. How much farther is it from Dot's house to Cal's house than from Dot's house to the bank?

It is _____ of a block farther.

3.

4. How much farther is it from Dot's house to Ken's house than from Dot's house to the bank?

It is _____ of a block farther.

4.

5. Cal walked from his house to Dot's house. Ken walked from his house to Dot's house. Who walked farther? How much farther?

_____ walked _____ of a block farther.

5.

NAME _____

Lesson 6 Subtraction (mixed numerals)

Rename so the fractions have the same denominator.

Rename $7\frac{3}{12}$ so you can subtract.

$$7\frac{1}{4} \rightarrow 7\frac{3}{12} \rightarrow 6\frac{15}{12}$$
$$-3\frac{2}{3} \rightarrow -3\frac{8}{12} \rightarrow -3\frac{8}{12}$$
$$3\frac{7}{12}$$

$$\begin{aligned} 7\tfrac{3}{12} &= 7 + \tfrac{3}{12} \\ &= 6 + 1 + \tfrac{3}{12} \\ &= 6 + \tfrac{12}{12} + \tfrac{3}{12} \\ &= 6 + \tfrac{15}{12} \\ &= 6\tfrac{15}{12} \end{aligned}$$

Write each answer in simplest form.

	a	*b*	*c*	*d*
1.	$5\frac{1}{3}$ $-3\frac{3}{4}$	$7\frac{3}{5}$ $-4\frac{7}{10}$	$6\frac{1}{6}$ $-1\frac{3}{8}$	$5\frac{4}{9}$ $-2\frac{1}{3}$
2.	$4\frac{3}{8}$ $-2\frac{1}{3}$	$3\frac{5}{6}$ $-2\frac{1}{12}$	$6\frac{4}{7}$ $-5\frac{1}{2}$	$6\frac{3}{5}$ $-2\frac{3}{10}$
3.	$5\frac{7}{8}$ $-1\frac{3}{5}$	$3\frac{1}{9}$ $-\frac{1}{3}$	$2\frac{2}{3}$ $-1\frac{1}{2}$	$1\frac{3}{8}$ $-\frac{9}{10}$
4.	$4\frac{2}{9}$ $-\frac{2}{3}$	$6\frac{4}{5}$ $-5\frac{3}{7}$	$3\frac{7}{12}$ $-1\frac{9}{10}$	$2\frac{1}{8}$ $-\frac{5}{12}$

CHAPTER 13

Lesson 6 Problem Solving

Solve. Write each answer in simplest form.

1. One fish swam around the tank $1\frac{1}{2}$ times. Another swam around the tank $\frac{3}{4}$ of a time. How many more times around the tank did the first fish swim?

It swam _____ time more around the tank.

1.

2. Mrs. Tanner bought $2\frac{1}{2}$ cans of paint. She used $1\frac{2}{3}$ cans of paint on the garage. How much paint did she have left?

She had _____ of a can left.

2.

3. Lorena packed her overnight bag in $4\frac{1}{2}$ min. She packed the car in $1\frac{7}{10}$ min. How much longer did it take her to pack her bag than to pack the car?

It took her _____ min longer to pack her bag.

3.

4. Allen practised the guitar $1\frac{1}{4}$ h today. He practised $\frac{2}{3}$ h before lunch. How long did he practise after lunch?

He practised _____ h after lunch.

4.

5. Karen ran a race in $9\frac{3}{10}$ s. Curt ran the race in $7\frac{4}{5}$ s. How much longer did it take Karen to run the race?

It took _____ s longer.

5.

6. Fido can run the obstacle course in $2\frac{5}{8}$ min. Spot can run it in $2\frac{7}{9}$ min. How much faster can Fido run the race?

Fido can run the race _____ min faster.

6.

NAME _____

Lesson 7 Subtraction Review

Write each answer in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{7}{9} - \frac{4}{9}$	$\frac{7}{8} - \frac{1}{2}$	$\frac{7}{8} - \frac{3}{16}$	$\frac{11}{12} - \frac{1}{6}$
2.	$\frac{4}{5} - \frac{2}{3}$	$\frac{7}{10} - \frac{6}{10}$	$\frac{9}{10} - \frac{2}{5}$	$\frac{11}{12} - \frac{3}{4}$
3.	$\frac{5}{12} - \frac{3}{12}$	$\frac{3}{8} - \frac{1}{5}$	$\frac{5}{8} - \frac{3}{8}$	$\frac{2}{3} - \frac{1}{6}$
4.	$4\frac{7}{10} - 1\frac{2}{5}$	$3\frac{5}{12} - 1\frac{1}{12}$	$8\frac{3}{10} - 5\frac{9}{10}$	$5\frac{3}{8} - 3\frac{5}{8}$
5.	$1\frac{1}{4} - \frac{3}{10}$	$4\frac{6}{7} - 2\frac{3}{7}$	$1\frac{1}{3} - \frac{5}{6}$	$2\frac{4}{5} - \frac{9}{10}$

CHAPTER 13

Lesson 7 Problem Solving

Solve. Write each answer in simplest form.

1. Anne spends $9\frac{1}{4}$ h in bed each night. It takes her $\frac{3}{4}$ h to fall asleep. How long is she asleep each night?

Anne is asleep for _____ h each night.

1.

2. Anne spends $6\frac{5}{8}$ h at school every day. She spends $1\frac{7}{8}$ h at lunch and recess. How long is she in class?

Anne is in class for _____ h.

2.

3. John and Mara are reading the same book. John has read $\frac{4}{5}$ of the book and Mara has read $\frac{2}{3}$ of the book. How much more of the book has John read than Mara?

John has read _____ more of the book.

3.

4. A frozen dinner calls for $3\frac{1}{2}$ min in the microwave on high and $1\frac{3}{4}$ min on medium. How much longer is the dinner on high than on medium?

The dinner is on high for _____ min longer.

4.

5. Meagan worked $7\frac{1}{2}$ h. Joshua worked $5\frac{3}{4}$ h. How much longer than Joshua did Meagan work?

She worked _____ h longer.

5.

6. It took Amber $2\frac{2}{3}$ h to read 2 books. She read one book in $\frac{5}{6}$ h. How long did it take her to read the other one?

It took _____ h to read the other book.

6.

7. Mr. Wakefield used $8\frac{1}{4}$ buckets of water to fill two tanks. He put $3\frac{7}{8}$ buckets in one tank. How much water did he put in the other tank?

He put _____ buckets in the other tank.

7.

NAME _____

Lesson 8 Subtraction Review

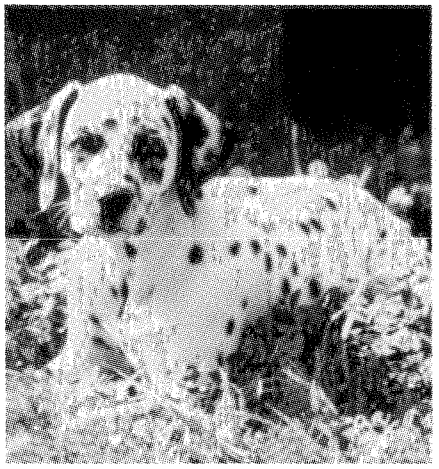
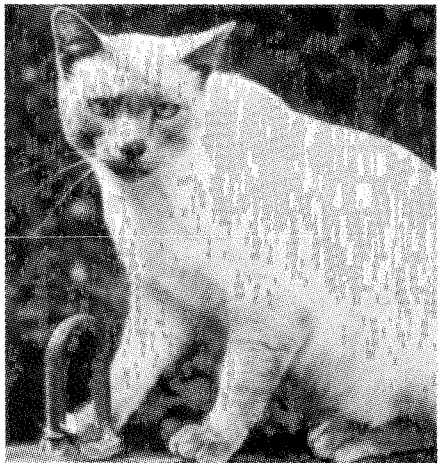
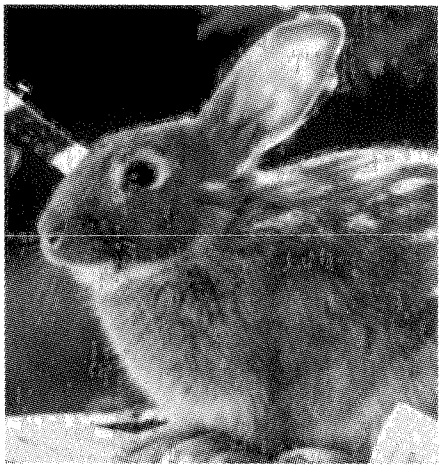
Write each answer in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{7}{9} - \frac{2}{9}$	$\frac{5}{7} - \frac{1}{7}$	$\frac{5}{8} - \frac{3}{8}$	$\frac{7}{10} - \frac{1}{10}$
2.	$3\frac{5}{6} - 2\frac{1}{6}$	$4\frac{5}{9} - 3\frac{2}{9}$	$5\frac{1}{4} - 1\frac{3}{4}$	$1\frac{4}{15} - \frac{7}{15}$
3.	$\frac{3}{4} - \frac{2}{3}$	$\frac{4}{5} - \frac{2}{3}$	$\frac{3}{4} - \frac{1}{2}$	$\frac{5}{9} - \frac{1}{3}$
4.	$\frac{7}{8} - \frac{3}{4}$	$\frac{5}{6} - \frac{1}{2}$	$\frac{3}{4} - \frac{1}{6}$	$\frac{7}{10} - \frac{1}{12}$
5.	$3\frac{7}{8} - 2\frac{1}{6}$	$4\frac{7}{10} - 1\frac{4}{5}$	$5\frac{5}{12} - 3\frac{7}{10}$	$6\frac{2}{9} - \frac{11}{12}$

CHAPTER 13

Lesson 8 Problem Solving

In Allen's class, $\frac{1}{4}$ of the students have dogs, $\frac{1}{2}$ have cats, and $\frac{1}{8}$ have rabbits as pets.

Solve. Write each answer in simplest form.

1. What fraction more of the class have cats than dogs?

_____ more of the class have cats than dogs.

2. What fraction more of the class have dogs than rabbits?

_____ more of the class have dogs than rabbits.

3. What fraction more of the class have cats or rabbits than dogs?

_____ more of the class have cats or rabbits than dogs.

4. What fraction more of the class have none of these pets?

_____ of the class have none of these pets.

1.	2.
3.	4.

NAME _____

CHAPTER 13 PRACTICE TEST
Subtraction of Fractions

Write each answer in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{9}{10} - \frac{7}{10}$	$\frac{4}{5} - \frac{2}{3}$	$\frac{3}{4} - \frac{5}{8}$	$\frac{8}{9} - \frac{2}{9}$
2.	$\frac{5}{6} - \frac{1}{2}$	$\frac{1}{2} - \frac{3}{8}$	$\frac{11}{12} - \frac{3}{12}$	$\frac{1}{2} - \frac{5}{12}$
3.	$\frac{3}{4} - \frac{3}{8}$	$\frac{5}{6} - \frac{1}{9}$	$\frac{7}{8} - \frac{1}{4}$	$\frac{2}{3} - \frac{1}{2}$
4.	$5\frac{7}{8} - 2\frac{3}{8}$	$4\frac{2}{5} - 2\frac{3}{10}$	$6\frac{1}{2} - 1\frac{1}{3}$	$3\frac{1}{3} - 1\frac{5}{6}$
5.	$3\frac{11}{12} - 1\frac{5}{6}$	$5\frac{5}{8} - 2\frac{3}{4}$	$2\frac{1}{9} - \frac{7}{9}$	$1\frac{2}{5} - \frac{1}{2}$

CHAPTER 13

NAME _____

CHAPTER 14 PRETEST
Geometry

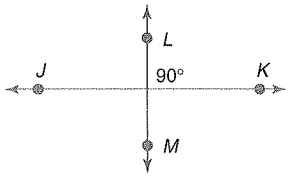
Circle the phrase that correctly describes each figure.

1.

line *MN* line segment *MN* line *M*

2.

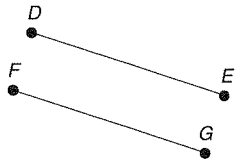
line *R* line segment *RP* line *RP*

3. 

line segment *JK* ∥ line segment *LM*

line *JK* ⊥ line *LM*

line segment *JK* ⊥ line segment *LM*

4. 

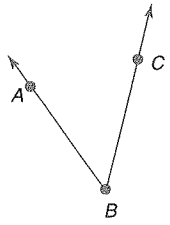
line *DE* ∥ line *FG*

line *DE* ⊥ line *FG*

line segment *DE* ∥ line segment *FG*

Name each angle. Give its measure and identify it as *acute, obtuse,* or *right.*

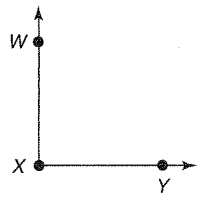
5. *a*



_____

_____

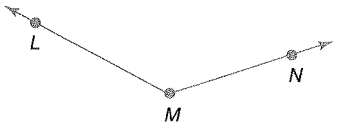
b



_____

_____

c

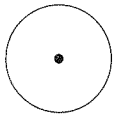


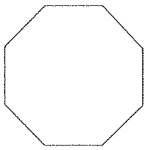
_____

_____

Write the letter for the name of each figure in the blank.

a *b*

6. _____  _____

7. _____ _____ 

a. octagon
b. triangle
c. hexagon
d. pentagon
e. square
f. quadrilateral
g. circle