Calculate!

Find two numbers whose product would be between 430 and 450. Can you find more solutions?

Find two numbers whose product would be between 2,500 and 2,600. Can you find more solutions?

(1.05)

Thinking Mathematically

Peter's math scores this semester are 92, 81, 84, 76, 93, 78, 82, and 91. Compute the median and range of his scores.

What does he need to do to increase his median score?

Can he lower the range? Why ?

(4.02)

Exploring Data

List your place of birth by city, county, state, and country. Add your name to the class Venn diagram to show where you were born. Look at the data on the diagram. Were any students born outside the United States? How many students were born in your town?

(4.01)

Looking Out For Math

Draw or cut out all possible different rectangles with a perimeter of 16 inches. Label. Find and record the area of each rectangle. Which rectangle has the greatest area? If you were building a dog pen, which rectangular shape would be best? Why?

(2.01, 2.02)
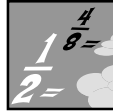
Fraction Action

Count by thirds from 8 to 12.

$8, 8\dfrac{1}{3}, \underline{\quad}, \ldots$

What whole number is equal to $8\dfrac{3}{3}$?

Clue:

$\dfrac{3}{3} = \underline{\qquad}$

(1.04a)

# Division Duel

PLACE
DIVISION
FLASH CARDS
FACE DOWN
HERE.

1	2	3	4	5	6	7
8	9	10	11	12	13	14

| 1	2	3	4	5	6	7
8	9	10	11	12	13	14

Each player draws one flash card from the top of the deck. Both players answer the division problems. The winner is the player whose answer is the larger number (the winner must be able to say his or her number fact correctly.) The winner of each round places a marker on his or her number grid. The champion is the first player to win 14 rounds.

(1.02)
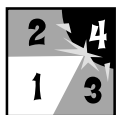
Keeping Skills Sharp

1. $3434 + D = 4310$ 2. $826 - 415$

3. $5 \times B = 20$ 4. $L \times 8 = 72$

5. $36 \div 6 =$

6. How many obtuse angles in this figure?

7. $100 \text{ cm} = \underline{\hspace{1cm}} \text{ m}$

8. How many dimes in $1.65?

9. The concession stand at the ballpark sells hot dogs for $1.00 each. Their cost per hot dog is $0.25. If they sold 20 hot dogs what was the profit?

10. The grocer places a case of canned tomatoes in a three-shelf display. He put 7 cans on each shelf and had 3 cans left over. How many cans in the case?
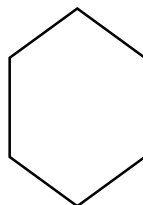
Solve this!

Listen to the song, "The Twelve Days of Christmas." How many gifts in all did my true love give to me?

First day: My true love gave to me a partridge in a pear tree.

$$1$$

Second day: My true love gave to me two turtle doves <u>and</u> a partridge in a pear tree.

$$2 + 1 + 1$$

Third day . . .

(1.05)

Calculate!

44 x 10 = 440

20 x 22 = 440

148 x 3 = 444

835 x 3 = 2505

1280 x 2 = 2560

10 x 258 = 2580

Division Duel Game

You will be able to adjust the difficulty by using easier or more difficult flash cards, according to which facts the students need to memorize.

Problem of the Week

Answer: 364 gifts. Have students set up a table in order to find a pattern that simplifies this task.

1st day: 1
2nd day: 1 + 2
3rd day: 1 + 2 + 3
4th day: 1 + 2 + 3 + 4

Looking Out for Math

3 x 5 area 15 perimeter 16
2 x 6 area 12 perimeter 16
1 x 7 area 7   perimeter 16
4 x 4 area 16 perimeter 16
A square pen will give the largest area.
Remember, squares are rectangles!

Fraction Action

Answers: 8, 8 1/3, 8 2/3, 9, 9 1/3, 9 2/3, 10, 10 1/3, 10 2/3, 11, 11 1/3, 11 2/3, 12
8 3/3 = 9

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1.   Write one thousand forty two in numerals
2. $2 + 13 \div 5 + 1 =$
3.   Nearest ten cents: 57¢.
4.   60 - 9
5.   8 x 11
6.   The value of 5 dimes, 1 quarter, and 2 nickels
7.   Number of pints in 5 quarts
8.   Number of sides on 4 stop signs

Keeping Skills Sharp

|			
1.	876	6.	6
2.	411	7.	1 m
3.	4	8.	16
4.	9	9.	$15.00
5.	6	10.	24

Calculate!

Calculate these problems: 1 x 1= n,

11 x 11 = n, 111 x 111 = n. Predict the solution to 1111 x 1111. Check out your prediction. Following this pattern, predict 11111 x 11111 = n. Why can't you check this prediction on a regular 4-function calculator?

(1.05)

Thinking Mathematically

Using a calendar, find figures like these:

	3				9	
9	10	11		15	16	17
	17				23	
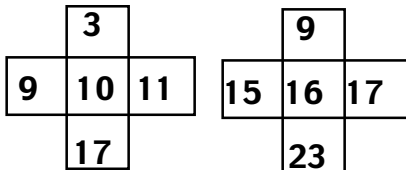
What is the relationship of the center number to the outer numbers on each row of the figure?
    to the sum of all 5 numbers in the figure?

Does this happen for any number on any calendar? Make a chart to find out.

Why do you think

this happens?

Center Number	Sum of 5 Numbers
10	50
16	?

(5.02)

Exploring Data

Collect information regarding the types of vehicles in the school parking lot each day for a week. Display the data using both bar and circle graphs. Is one type easier to read than the other? Why?
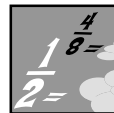
(4.01)

Looking Out For Math

Print your name. How many letters in your name have a lin of symmetry? What letters would have more than one line of symmetry?
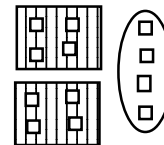
(1.05)

(1.03)

Fraction Action

Does the fraction describe the diagram? Why? If not, how would you fix it?

a) $\frac{3}{6}$

Why?

_____

b) $\frac{2}{3}$

Why?

_____

c) $\frac{4}{5}$

Why?

_____
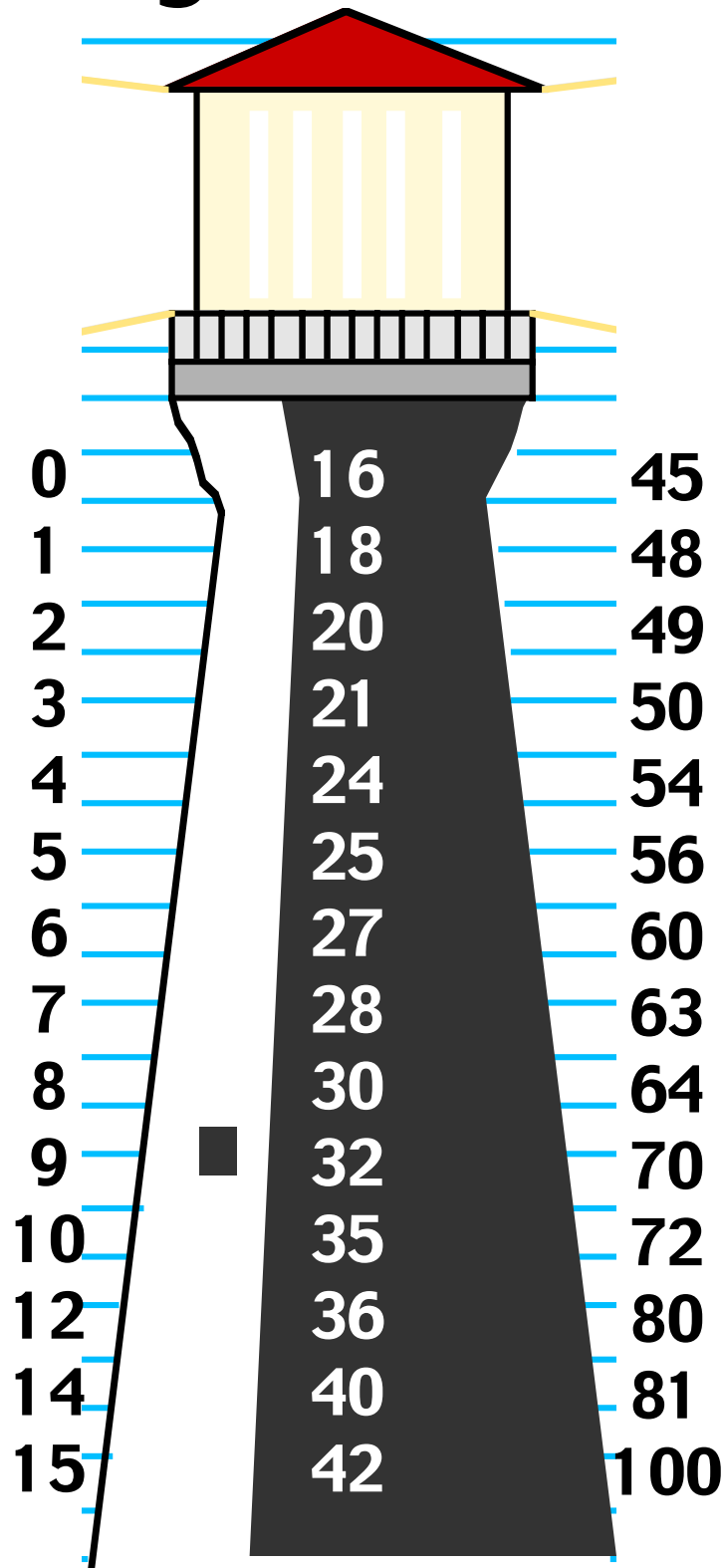
COAST

COAST

COAST

COAST

F
R
E
E

F
R
E
E

F
R
E
E

F
R
E
E

Directions: Choose numbers from the Possible Products Lighthouse sheet and place them in the COAST grid. Select carefully the first time because erased numbers will not be counted. Your teacher will call out two factors. You should cover the product of the factors if it is on your grid. Your teacher will tell how to win (5 in a row, four corners, letters of the alphabet, or cover the whole board).

(1.02)

Possible Products Lighthouse

0	16	45
1	18	48
2	20	49
3	21	50
4	24	54
5	25	56
6	27	60
7	28	63
8	30	64
9	32	70
10	35	72
12	36	80
14	40	81
15	42	100

Number Facts for "Coast" Game

6 x 0	4 x 4	9 x 5
0 x 8	8 x 2	6 x 8
1 x 1	9 x 2	7 x 7
1 x 2	6 x 3	5 x 10
3 x 1	10 x 2	6 x 9
1 x 4	5 x 4	7 x 8
5 x 1	7 x 3	10 x 6
1 x 6	6 x 4	9 x 7
7 x 1	3 x 8	8 x 8
1 x 8	5 x 5	7 x 10
1 x 9	3 x 9	9 x 8
3 x 3	7 x 4	10 x 8
5 x 2	6 x 5	9 x 9
6 x 2	8 x 4	10 x 10
3 x 4	7 x 5	6 x 6
7 x 2	9 x 4	10 x 4
3 x 5	6 x 7	

Note: These factors are in a similar order as the products appear on the Possible Products Lighthouse. They need to be called randomly when playing COAST.

1. 7,777 + 333 =

2. 8,080 - H = 7676

3. 6 x Z - 4 = 38

4. 40 x 8 =

5. 9 x ☐ = 54

6. At 3:00 the hands of the clock are perpendicular. Give another time for which the hands of the clock are perpendicular.

7. Number of vertices on a cube?

8. Nearest thousand? 46,580

9. Joey got a new puppy. The puppy weighed 4 pounds. This was half the weight of his bowling ball. How much does his bowling ball weigh?

10. If Sam bought a turkey sandwich for $4.95 and a drink for $0.95, how much change would he receive from a $10.00 bill?

Solve this!
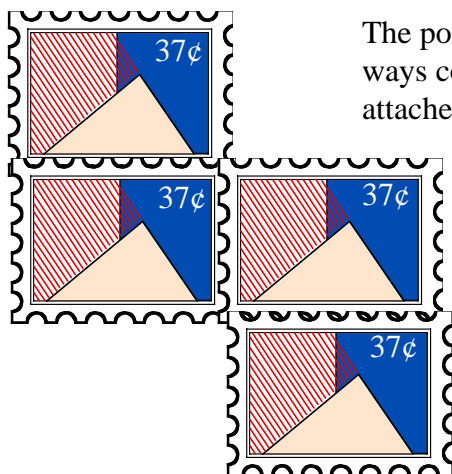
The post office has rectangular stamps for sale. How many different ways could the four stamps be arranged so that you buy them all attached? Here is one example.

How many different ways could _five_ stamps be arranged so that you could buy them all attached? If each stamp is a rectangle 1.5 cm high and 2 cm long, find the perimeter of each arrangement.

(2.01)

Calculate!

1 x 1 = 1

11 x 11 = 121

111 x 111 = 12321

so 1111 x 1111 = 1234321

and 11111 x 11111 = 123454321

A regular 4-function calculator cannot display this 9-digit number. The display holds only 8 digits.

Thinking Mathematically

The sum of the outer numbers on each row will be double the center number. The sum of all 5 numbers will be five times the center number. The pattern is:

	n−7	
n−1	n	n + 1
	n + 7	

Students should try several examples from different calendars.

Game of the Week

Coast is a large group or whole class bingo game. Each student will need a gameboard. There are four games to each sheet. Make a transparency of the lighthouse. Students put products on their boards from your lighthouse transparency. There is a factor sheet to help keep track of the calls.

Fraction Action

Solutions:

a)   There are only 5 groups so the stars are divided into fifths, not sixths

b)   correct

c)   The parts are not equal (the groups do not contain the same number of symbols).

Problem of the Week

Solution: 4 stamps -5 ways

5 stamps - 12 ways

(These solutions relate to tetrominoes and pentominoes made with 4 and 5 squares)

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1.   1 more than 2999
2.   14 + 30 + 4 ÷ 6
3.   Nearest hundred: 719.
4.   59 + 31
5.   17 x 0
6.   10 minutes before 5:00
7.   Which is longer -- 2 feet or 1 yard?
8.   Number of ears plus tails on 9 mice.

Keeping Skills Sharp

1.   8110
2.   404
3.   7
4.   320
5.   6
6.   9:00
7.   8
8.   47,000
9.   8 lbs.
10. $4.10

Calculate!

Suppose division key on your calculator does not work. How would you solve this problem on the calculator without the division key? 216 divided by 54.

(1.05)

Thinking Mathematically

Write a story that could be solved by using this equation.

$$\frac{1}{3} \text{ of } 15 \text{ is } 5$$

(1.03)

Exploring Data

Select a famous North Carolinian. Display on a time line five accomplishments or significant events in the life of this individual.

Develop a personal time line depicting significant activities and events in each student's life.

(4.01)

Looking Out For Math

Suppose all of the furniture were removed from your classroom. If 4th graders stand shoulder to shoulder in comfortably close rows, how many can stand together in your classroom? First make an estimate. Then figure out how you can investigate this. How many students would be able to stand on a football field?
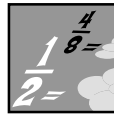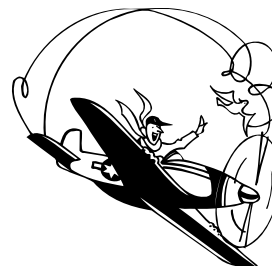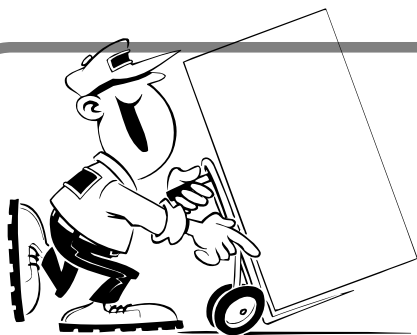
(1.05)

Fraction Action

The Wright Brothers flew in Kitty Hawk, North Carolina. Interview 10 different people. Find out how many have been on an airplane. What fraction of the people interviewed have flown. What fraction have not flown?

Compare your fractions to those of your classmates.

Put all your data together. What fraction of all the people interviewed have ever flown?

(1.03)

Deci-Moves

Number of Players: 2 players
Materials: You need 4 colored markers (cm cubes are good) for each player and a coin.

0.7	0.8	0.5	0.2
0.62	0.88	0.60	0.15
0.09	0.67	0.72	0.02
0.4	0.81	0.3	0 .27
0.04	0.75	0.1	0.91
0.49	0.05	0.57	0.25
0.31	0.95	0.13	0.65
0.3	0.4	0.5	0.6

(1.01c)

Directions:
1. Each player chooses one side of the board and places her or his cubes on the 4 triangles on that side.
2. Take turns tossing the coin.
3. If the coin comes up **heads**, move one of your markers to a space having a number **larger** than the number your cube is on.
4. If the coin comes up **tails**, move one of your cubes to a space having a number **smaller** than the number your cube is on.
5. You can move up or down, left or right, or diagonally, one space only:
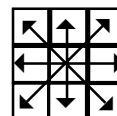
6. If your cube can move to a space occupied by your opponent's cube, his or her cube moves back to a beginning triangle. Only one cube may be on a space at one time.
7. If you are able to move one of your cubes, you must do so, no matter what the direction. If the only move you can make is away from a triangle on your opponent's side, you must make that move.
8. If you have no move within the rules, you lose your turn.
9. The winner is the first player to get all of her or his cubes to the triangles on the other side of the board.

Keeping Skills Sharp

1. $J + 2483 + 4309 =$ 7548

2. $4071 - 2895 =$

3. $5 \times 100 =$

4. $A \times 7 = 63$

5. $49 \div 7 =$

6. The time is 3:15 p.m. What time will it be in 35 minutes?

7. 1 kilometer = ___ meters

8. What is the value of the 3 in 137,896?

9. Suppose a drummer plays the drums for 4 beats and then plays a triangle for 2 beats. If he continues this pattern, what instrument will he be playing on the 25th beat?

10. Mary and Jamie went to a swim meet. Mary swam 10 feet farther than Jamie. Altogether they swam 54 feet. How far did each person swim?

Solve this!

How many different ways can you use these 5 digits
(use each number only once)
and any operation to make 24?

$$0 \quad 1 \quad 2 \quad 3 \quad 4$$

(1.02e)

82

Thinking Mathematically
You may need to model with concrete objects what this type of equation means since students are working with a fractional part of a group

Fraction Action
Use this activity to help children see how mathematics, and specifically fractions, can help them make sense of real life data.

Problem of the Week
There are many solutions. Some possibilities are:

4 x 3 x 2 x 1 + 0 = 24

3 x 2 x 1 x 4 - 0 = 24

10 + 4 x 3 + 2 = 24

21 + 3 + 4 x 0 = 24

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1. In 98,000, what digit is in the thousands place?
2. 8 + 14 - 4 ÷ 2
3. How many tens: 169
4. 42 - 11
5. 10 x 3
6. The value of 2 pennies, 3 nickels, and 4 dimes
7. Number of inches in 2 feet
8. Number of minutes in 1 hour

Keeping Skills Sharp

1. 756
2. 1176
3. 500
4. 9
5. 7
6. 3:50
7. 1,000
8. 30, 000
9. drums
10. Mary 32; Jamie 22

Calculate!

How many different numbers can be multiplied by 27 to reach any target number between 200 and 300.

What are they?

(1.05)

Thinking Mathematically

How is the population of our state determined? of your town? Why is it important to know our state's (and town's) population?

Research the history of the census.

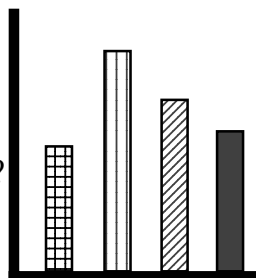What sort of information does a census record?

(4.01)

Exploring Data

The labels for this graph were accidentally erased from the computer.

Brainstorm:

• What could this graph represent?

• How should it be labeled?

• What could the title be?

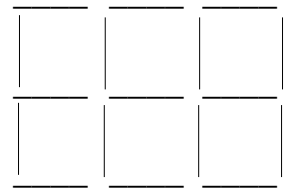• Is there more than one possible answer?
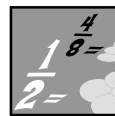
(4.01)

Looking Out For Math

Build this toothpick design.

• Remove five toothpicks and leave only three squares that are congruent.

• Remove four toothpicks and leave only four squares that are congruent.
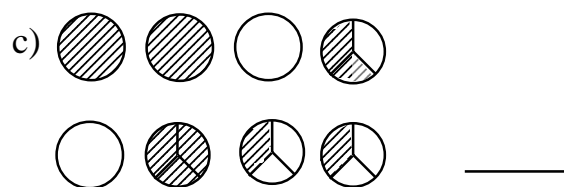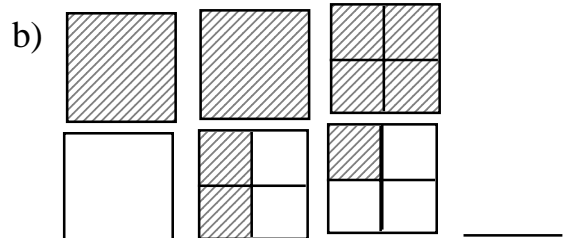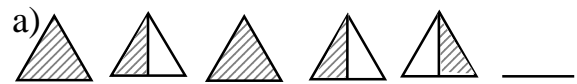
Create a toothpick puzzle for others.   (2.02)

Fraction Action

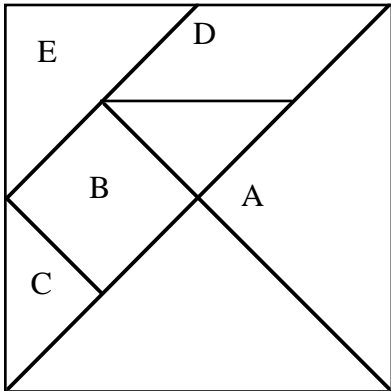Write the mixed number that names the shaded wholes and parts of each shape below:

a)

b)

c)

(1.03)

Tangram Challenges

Names: _____

_____

Complete these charts. Be certain both partners agree with the answers placed in the charts.

If the entire tangram = 1, then . . .

Piece	Fraction Name	Decimal Name
A		
B		
C		
D		
E		

If part D costs 40¢, then. . .
If part A costs $2, then . . .

Piece	Cost	Cost
A		$2
B		
C		
D	40¢	
E		

Bonus: Suppose the value of the entire tangram is $32.00. What would be the value of the middle-sized triangle?
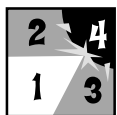
_____

How did you know this?

_____

_____

_____

_____

_____

_____

_____

_____

_____

If part B is equal to 1, then . . .
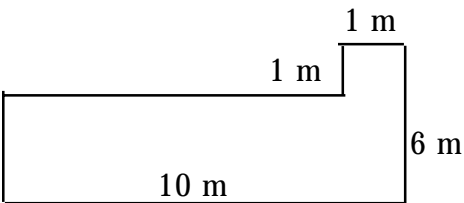
Piece	Fraction	Decimal
A		
B	1 or $\frac{1}{1}$	1 or 1.0
C		
D		
E		

(1.01a, 1.03)

Keeping Skills Sharp

1. $451 + X + 127 = 891$

2. $87{,}004 - 25{,}987 = T$

3. $7 \times R = 56$

4. $32 \div 4 =$

5.   What is the product of 3 and 5?

6.   Write >, <, or = 5 ft. ☐ 2 yards

7.   Whatis the area of this figure?

8.   What is 200 more than 8,956?

1 m

1 m

6 m

10 m

9.   It takes Nancy 15 minutes to walk a mile. How many miles
     would she walk in one and a half hours?

10. Larry reads an average of 20 pages an hour. How many hours
     will it take him to read a book with 160 pages?

Solve this!

Sharon has fewer than 20 coins. When she puts them in piles of 5, she has 1 left over.
When she put them in piles of 3, she also has 1 left over.

How many coins does Sharon have? (Show how you find your solution).

Sylvia has fewer than 40 coins but more than 10. If she puts them in piles of 6, she has 3
left over. If she puts them in piles of 5, she has 4 left over.

How many coins does Sylvia have? (Show your thinking

(1.05)

Calculate!

There are 4 solutions:

Students might first think of 270 as 27 x 10
and work from there.

8 x 27 = 216
9 x 27 = 243
10 x 27 = 270
11 x 27 = 297

Exploring Data

There are many possible answers. Be sure
students' ideas make sense. Discuss when a
bar graph might be used rather than a line
plot or circle graph.

Fraction Action

a)   3 1/2   (Put 2 halves
                         together to make the
                         third whole.)

b)   3 3/4

c)   4 1/3   (2/3 + 1/3 make the
                         fourth whole.)

Mental Math

Directions to Students: Number your paper from
1 to 8. Write your answers as the questions are called
out. Each question will be repeated only once.

1.   10 less than 880
2. $12 + 14 + 6 \div 4$
3.   Nearest hundred: 5,837
4.   56 + 14
5.   8 x 7
6.   12 minutes after 1:15
7.   Number of centimeters in 3 decimeters
8.   Mary has $2.00 and spent 3 quarters. How
         much does she have left?

Keeping Skills Sharp

1.   313
2.   61,017
3.   8
4.   8
5.   15
6.   <
7.   51 sq. m
8.   9,156
9.   6 miles
10.   8 hours