



Calculate!

Arrange the digits 1 to 5 in the boxes. Arrange them so that the resulting product is the largest possible product. Then arrange them to get the smallest possible product.

$$\begin{array}{r} \square \square \square \\ \times \square \square \\ \hline \end{array}$$

(1.05)



Thinking Mathematically

Read If You Made a Million by David M. Schwartz. With a partner or group, use catalogs and newspaper advertisements to plan a way to spend \$1,000,000. Use a calculator to help you find your totals. Decide on a way to present your plan.

(1.05)



Exploring Data

Find the average annual rainfall in your region for each of the four seasons. Graph the information using a variety of graphs. Discuss generalization: that might be drawn from this information.

Are these valid generalizations? Why or why not?

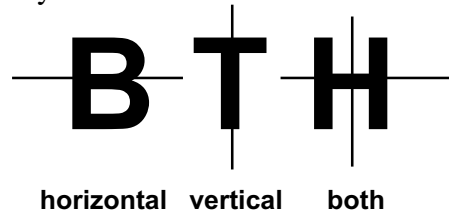


(4.01)

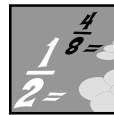


Looking Out For Math

Classify the capital letters of the alphabet according to those with horizontal symmetry, vertical symmetry, and both horizontal and vertical symmetry. How many words can you find in which all the letters in the word have only horizontal line symmetry or only vertical symmetry.



(Review of Symmetry)



Fraction Action

Take 18 counters. Tell whether you can divide the counters into these fractional parts evenly:


halves	_____	sixths	_____
thirds	_____	sevenths	_____
fourths	_____	eighths	_____
fifths	_____	ninths	_____

Try 17 counters. Which of these fractional parts can you divide the 17 counters into? List them.

Why do you think this is true?

(1.03)

Flying High

	6	6	6	6	6
	5	5	5	5	5
	4	4	4	4	4
	3	3	3	3	3
	2	2	2	2	2

Materials: Gameboard and Markers

Directions: Each player needs 10 markers. Players decide on a target number between 30 and 76 and write on a sheet of paper. Players take turns placing a marker on one of the numbers on the board, each time announcing the cumulative sum of the covered numbers. Each number may be covered only once. Example: Player one covers 3, the second player covers 5 and announces

$$3 + 5 = 8.$$

The third player may cover 4 and announce

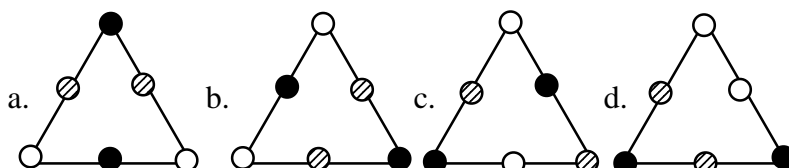
$$8 + 4 = 12.$$

The first player to reach the target number exactly wins. If a player goes over the target number, he or she is out.



Keeping Skills Sharp

1. $883 + 7416 =$
2. $3045 - B = 2150$
3. $(4 \times G) + 3 = 39$
4. $42 \div 7 =$
5. $9 \times 80 =$
6. Which two are the same?

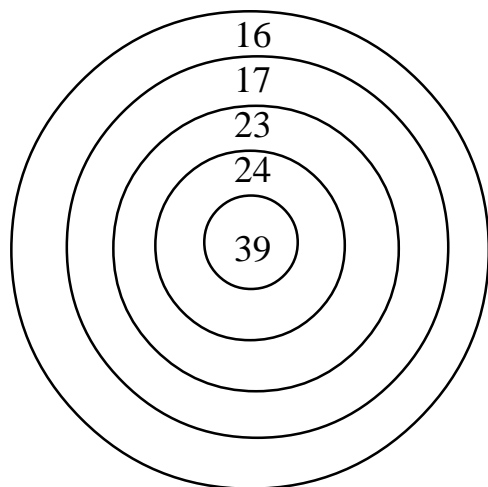


7. 2 gallons $<$, $>$, $=$ 5 liters
8. Write the numeral for: thirty-four thousand, six hundred four
9. The sum of two numbers is 150. Their difference is 0. What are the numbers?
10. Sedrick needed 7 pencil top erasers. They each cost 10 cents. How much change would Sedrick get back from \$5.00?

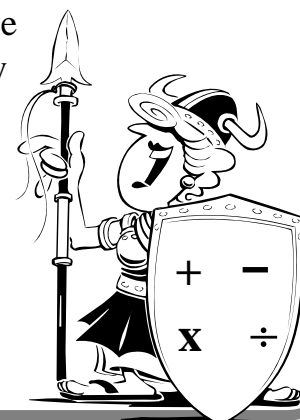


Solve this!

(1.05)



A spear-chucker threw 6 spears and made a score between 100 and 125. Where could her spears have landed on the target? How many different ways could she have scored?





To the Teacher ..

Grade 4

WEEK
13

Calculate!

Largest product =

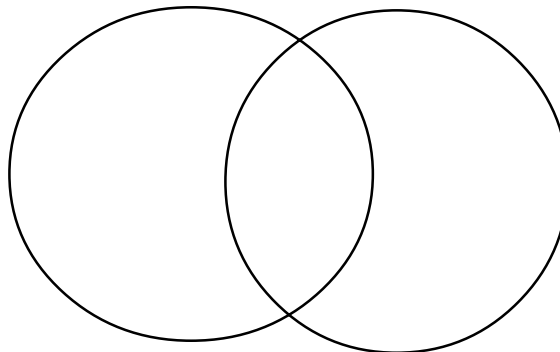
$$431 \times 52 = 22,412$$

Smallest product =

$$135 \times 24 = 3240$$

We think!

Looking Out for Math



This activity provides opportunity to use a Venn diagram as an organizer. The different ways letters may be written (fonts) can cause different classifications.

Fraction Action

For 18 counters:

halves	<u>yes</u>	sixths	<u>yes</u>
thirds	<u>yes</u>	sevenths	<u>no</u>
fourths	<u>no</u>	eighths	<u>no</u>
fifths	<u>no</u>	ninths	<u>yes</u>

17 counters cannot be divided equally into any of the above groups. 18 has many factors; 17 is a prime number which has only 2 factors - itself and 1.

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. The largest two-digit number
2. $4 \times 4 + 10 - 1 \div 5$
3. Round to the nearest ten: 41
4. $15 + 14$
5. 9×6
6. The value of 8 dimes, 2 nickels, and 10 pennies
7. Number of feet in 2 yards
8. $1/2$ of \$10

Keeping Skills Sharp

1. 8299
2. 895
3. 9
4. 6
5. 720
6. a, b
7. >
8. 34,604
9. 75, 75
10. \$4.30



Calculate!

Americans eat about 4,000,000 bushels of bananas a year. If there are 125 bananas in a bushel, how many bananas would that be? How many banana splits could you make?

(1.05)



Thinking Mathematically

Think of at least one math word that starts with each letter of the alphabet.



Can you think of more than one word per letter?
Where can you find this information?



Exploring Data

What is the typical cost of toys or games which fourth graders like best?

What questions do you need to ask to get this information?

Are the median and mode prices similar?

(4.02)



Looking Out For Math

Use the capital letters from a past week's activity and find the value of "NORTH CAROLINA" using the following rules:

letters without a line of symmetry are worth 1¢

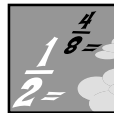
letters with horizontal symmetry are worth 5¢

letters with vertical symmetry are worth 10¢

letters that have both horizontal and vertical symmetry are worth 25¢

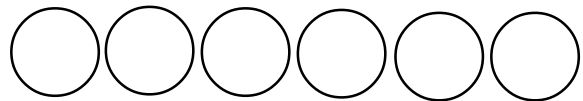
Whose name in the class is the most valuable?

(1.05 and review symmetry)



Fraction Action

Shade in $3\frac{3}{4}$ of these circles:



Count by fourths from $3\frac{1}{4}$ to $5\frac{3}{4}$:

$3\frac{1}{4}$, _____, _____, . . .

Now shade in two and two-thirds of these squares:



(1.03)

Charlotte Speedway Race



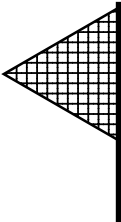
Materials: Gameboard, a marker for each player, one number cube or spinner labeled 1, 1, 2, 2, 3, 3

Number of Players: 2

Directions: Player rolls cube or spins and moves that number of spaces. Player must give a multiplication fact for the product in the space using 2 or 5 as one of the factors. If an incorrect answer is given, player loses turn, and returns to the previous position. Winner is the first to cross the finish line.



START

20	18	30	15	25	24	Pit Stop Location	0	55
								14
								2
40	35	Tire blows out. Lose turn	16	20	15	10	35	Trouble on the curve. Go back 2
8	 							
18								
50	Car stalls. Lose a turn.	30	4	12	45	Stop for gas. Lose a turn.	6	60

FINISH

(Review multiplication facts)



Keeping Skills Sharp

1. $56,785 - 8,888 =$
2. $6,006 - K = 4,767$
3. $4,000 \times 3 =$
4. $7 \times 6 + 3 =$
5. $535 \div 5 =$
6. Eloise had 35 quarters. How many dollars did she have?
7. The number of quarts in 4 gallons.
8. The length of one side of a regular hexagon if its perimeter is 24 cm.
9. Coach Jones bought 2 softballs for \$5.89 each and a bat for \$9.99. If he gave the clerk two \$20.00 bills, how much change should he receive?
10. Three girls ran on the winning relay team. Their times were 52 seconds, 58 seconds, and 1 minute 4 seconds. Did they beat the last winning team score of 3 minutes 3 seconds?



Solve this!

(Materials: rulers, square inch tiles or paper, different sizes of index cards and post-it notes.)

Record the perimeter and the area of each size index card and post-it note that you measure. Check with your teacher or an adult to find out how the size of the post-it notes and index cards are labeled on the front of a package. Write about your findings.

- * Cut a piece of paper that is 4 inches by 6 inches. Can you find examples of anything that is the same size as the paper you cut?

(2.01, 2.02)





To the Teacher ..

Grade 4

WEEK
14

Calculate!

500,000,000 bananas

Thinking Mathematically

Possible words:

Average

Bushel

Centimeter, Celcius, etc.

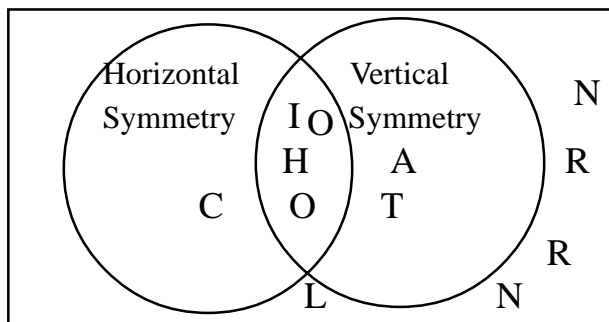
Consider having the class create a math alphabet book. Then share with them David M. Schwartz's G is for George (Tricycle Press, Berkeley, CA).

Exploring Data

For more information on median and mode, see the glossary in Teachers Talk section.

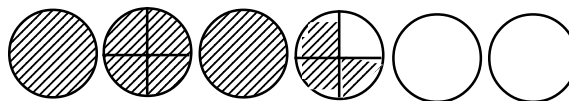
Looking Out For Math

Students may use a Venn diagram or another chart to organize their data.



“NORTH CAROLINA” is worth \$1.40.

Fraction Action

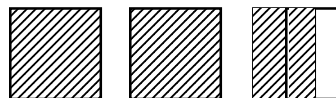


Other solutions are possible.

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

$4 \frac{2}{4}$, $4 \frac{3}{4}$, 5, $5 \frac{1}{4}$, $5 \frac{2}{4}$,

$5 \frac{3}{4}$



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.

- Write eighty thousand five hundred
- $17 + 2 - 14 \times 6 + 2$
- Nearest ten: 98
- $72 + 30$
- 10×9
- 15 minutes before 3:10
- Number of centimeters in one meter
- Which is smaller: $\frac{1}{4}$ or $\frac{1}{8}$?

Keeping Skills Sharp

- 47,897
- 1239
- 12,000
- 45
- 107
- 8
- 16
- 4 cm
- \$18.23
- Yes



Calculate!

If you had a million dollars and you decided to give away \$50 every hour beginning on your 10th birthday. How old would you be when you ran out of money?

(1.05)



Thinking Mathematically

How large is the area of your hand? Which is larger (and about how much): the area of your hand or the area of your foot?

How does the size of your hand and your foot compare with your teacher's hand and foot?

Have you read *Dad's Diet* by Barbara Comber? Measurements and other mathematical possibilities abound!

(2.01)



Exploring Data

Use the daily newspaper and record on a chart the time of sunrise and sunset for one week.

Display the information on a graph of your choice.

Is there a pattern to the times of sunrise and sunset over this period?

(4.01)

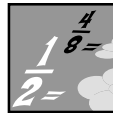


Looking Out For Math

Draw and cut out a shape with a perimeter of 20 inches.



(2.02)



Fraction Action

Add on to each fractional part of the segment to make one whole segment.

$$\frac{1}{2} \quad \text{_____}$$

$$\frac{1}{3} \quad \text{_____}$$

$$\frac{1}{4} \quad \text{_____}$$

$$\frac{2}{3} \quad \text{_____}$$

$$\frac{2}{5} \quad \text{_____}$$

$$\frac{4}{4} \quad \text{_____}$$

(1.04a)

CAROLINA CLIP-IT



Materials: Gameboard, 2 paper clips, different colored markers

Number of Players: 2

Directions: Player one places paper clips on two numbers at the bottom of the page. Player one multiplies the two numbers and places a marker on the correct product. Player two can move only one of the paper clips, then multiplies the two numbers and places a marker on the correct product. Both paper clips may be placed on the same number. Play continues until one player has 4 markers in a row, horizontally, vertically or diagonally.

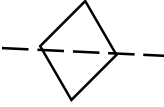
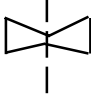
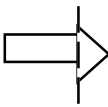

1	7	15	25	36	54
2	8	16	27	40	56
3	9	18	28	42	63
4	10	20	30	45	64
5	12	21	32	48	72
6	14	24	35	49	81

1 2 3 4 5 6 7 8 9

(1.02)



Keeping Skills Sharp

1. $1,234 + R + 1463 = 3532$
2. $509 - 228 =$
3. $8 \times 60 =$
4. $14 \div M = 7$
5. $13 \times 100 =$
6. In which figure(s) does the dashed line show a line of symmetry?
 - a. 
 - b. 
 - c. 
 - d. 
7. Sue bought candy for \$0.76. She paid with a dollar bill. How much change did she receive?
8. How many tens: 306
9. Latonia bought 3 used CDs for \$1.98 each. How much change should she get from a \$10 bill?
10. The cost of 4 oranges is \$1.00. How much will 7 oranges cost?



Solve this!

Sue and Bob need to call Joel to tell him about the class trip. They know the first part of his number 212 but have forgotten the rest. Sue remembered that it ends in 4 and Bob says, "All the other digits are odd."

How many numbers will they have to call before they get the right number?

212-__ __ __4???

(4.04)



To the Teacher ..

Calculate!

There are $24 \times 365 = 8,760$ hours in a (non-leap) year. So you would give away \$438,000 each of the first two years, leaving \$124,000 to be spent after your 12th birthday. You would be 12 years old when you ran out of money.

Problem of the Week

125 numbers $5 \times 5 \times 5$

Thinking Mathematically

Provide centimeter graph paper for students to trace hands and feet. Prepare tracing of your hand and foot for the comparisons. Students will need to decide how to count the parts of centimeter squares in the areas of hands and feet.

Game of the Week

You might introduce this game by playing against the class using a transparency of the game board. Students use both game-playing strategies and knowledge of multiplication facts to try to win.

Fraction Action

Students construct whole lines from parts of lines. They must think of fraction in a new way. For example, given $\frac{3}{5}$ of a line, the child must realize that this is 3 out of 5 equal parts (fifths), that the whole line would have 5 fifths, and that they need to add two more fifths to the line. Students may visually approximate each of the remaining parts or use a ruler or strip of paper to measure one part as an aid in drawing the rest of the line.

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. 50 more than 650
2. $14 + 20 - 6 \div 4$
3. Round to the nearest hundred: 241
4. $80 - 11$
5. 4×0
6. The value of 6 nickels and 2 quarters
7. Number of feet in 24 inches
8. Number of legs on 3 spiders

Keeping Skills Sharp

1. 835
2. 281
3. 480
4. 2
5. 1300
6. a, b, d
7. \$0.24
8. 30
9. \$4.06
10. \$1.75

Math News

Materials we need for math

We are collecting your good “junk” for our classroom. Things that you might throw away we can use for sorting, counting, building, patterning, graphing and so on. Here is a list with examples of items we can use:

- Containers and lids such as egg cartons, plastic tubs of different sizes and shapes, tops of spice jars, shampoo bottles, and gallon containers.
- Nature objects such as interesting sea shells, different pine or fir cones, nuts, dried beans, and different shapes of macaroni.

- Collectibles such as keys, buttons, nuts and bolts, clips, and old jewelry.
- Paper things like toilet paper or paper towel rolls, cups, wrapping paper or wallpaper samples, sandpaper, catalogs with pictures of toys or foods, and large puzzles.

Also, we will be cooking. Please let me know if you can send some ingredients. I have a list of items needed for our cooking projects.

An Activity-filled Mathematics Classroom

When you visit our school, you will see children actively engaged in learning

mathematics in a variety of ways. Some explorations are student-initiated and others are teacher directed. In all parts of the mathematics program, children learn by doing. The classroom is set up so that children can explore, investigate, estimate, make predictions, count, build, and talk about their ideas. Children are encouraged to tell how they arrive at their answers and to look for alternative ways to solve problems. They use mathematics in all of the centers so that mathematics is related to daily living, not a subject apart. New ideas are revisited in a variety of ways so that children have opportunities to develop understandings over time and in their own styles of learning.

Supporting your child at school

It is important for home and school to join hands in helping every child learn mathematics. Mathematics is a tool for solving problems, computing, and completing spatial tasks. This monthly newsletter is about what we are doing at school in mathematics and tips for things with patterns that families can do with their children at home.

Math is a very important tool. Here are ways you can help your child be successful in learning mathematics:

- Encourage your child to think of himself or herself as a mathematician.
- Be sure that your child comes to school ready to learn -- rested, nourished, and ready to be part of a larger group.
- Let your child know that you expect him or her to be successful and to participate in class.
- Talk with the teacher, visit the school, and read carefully the materials that come home with your child.



Calculate!

Etha Lupton Wingate was born on September 16, 1892. When she celebrated her 100th birthday in 1992, how many months old was she? Days old? Hours old? Minutes old? Do you know any centenarians?

(1.05)



Thinking Mathematically

Complete each pattern. State the rule.

- a) 1, 8, 15, 22, __, __, __, ...
- b) 2, 4, 8, 16, __, __, __, ...
- c) 28, 24, 20, __, __, __, ...
- d) 1, 3, 6, 10, __, __, __, ...
- e) 2, 2.5, 3, 3.5, 4, __, __, __
- *f) M, T, W, T, __, __, __

(5.01b)



Exploring Data

Brainstorm a list of things which you could observe that are likely to change over time, for example, the number of minutes your older sister talks on the phone each day, or the number of cars that pass your house each day between 5 and 5:30 p.m. Choose one topic to investigate and keep data for two weeks. Display your data and write a summary of what you observed.

(4.01)

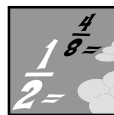


Looking Out For Math

Use one inch grid paper. Cut out five different shapes with a perimeter of 20 inches. How many one-inch color tiles will you need to fill each one?



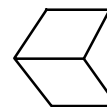
(2.01, 2.02)



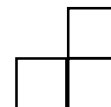
Fraction Action

Add on to the fractional parts shown to make the whole region.

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



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



c) $\frac{1}{5}$

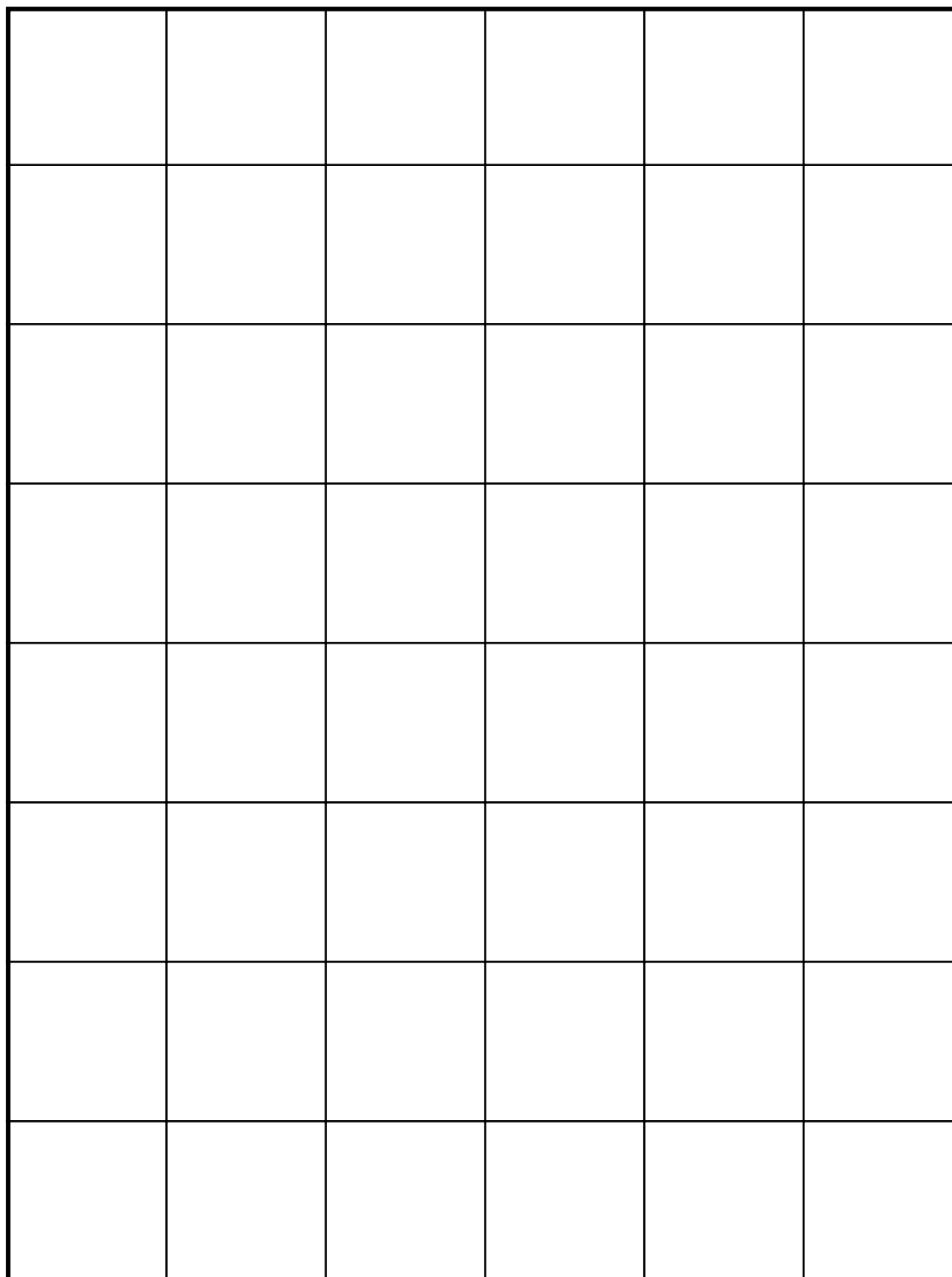


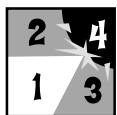
d) $\frac{3}{4}$



(1.04a)

One-Inch Graph Paper





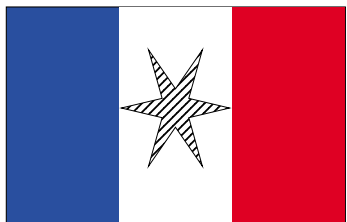
Keeping Skills Sharp

1. $2,687 + 8,903 =$
2. $H - 127 = 279$
3. $7 \times D = 56$
4. $7 \times 80 =$
5. $70 \times 8 =$
6. Number of centimeters in two and a half meters
7. Janie traded 18 dimes and 9 nickels for quarters. How many quarters did she get?
8. Put $>$, $<$, or $=$ in the box:
 $40,000 + 16,000 + 800 + 6$ $50,000 + 6,000 + 6 + 800$
9. Jill placed four pictures on each page of a 20 page photo album and had 16 extra pictures. How many total pictures did she have?
10. If each car will hold one driver and five students, how many cars will be needed to take Mrs. Cook's 24 students on their field trip?



Solve this!

Maria has cloth in four colors (red, blue, green, yellow) and two styles (large, small) for the school logo. The flag she is making will have two different stripes with white in the middle and the logo. What is the probability that her design will have red and blue stripes and the large logo?



(4.04)

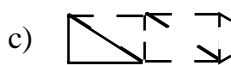
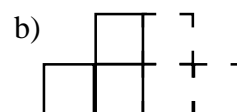
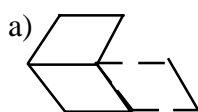
To the Teacher ..

Thinking Mathematically

- a) 29, 36, 43 (add 7)
- b) 32, 64, 128 (x 2 or double)
- c) 16, 12, 8 (subtract 4)
- d) 15, 21, 28 (+2, +3, +4, . . .)
- e) 4.5, 5, 5.5, (add one-half)
- f) F, S, S (days of the week)

Fraction Action

The students complete a whole region given a fractional part of the region. They should complete the whole freehand, drawing the additional parts as nearly like each part of the whole as they are able. The resulting shapes will vary because the additional parts can be placed in any position.



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.

- In 5043, what digit is in the hundred's place?
- $7 + 19 - 3 + 1 \div 8$
- Nearest hundred: 862
- $90 + 14 =$
- 7×6
- 12 minutes after 4:30
- Number of yards in 12 feet.
- Mary had 75¢. She bought a pen for 25¢ and a sticker for 10¢. How much did she have left?

Keeping Skills Sharp

- 11590
- 406
- 8
- 560
- 560
- 250
- 9
- =
- 96
- 5