CSMP Mathematics for the Upper Primary Grades Part III

Blacklines

Note: This packet contains blackline masters for home activities, parent letters, and numerous activities that coordinate with *CSMP Mathematics for the Upper Primary Grades, Part III.* There are no limits to the number of times these blacklines may be reproduced.

The first blackline is a letter to introduce parents/guardians to *CSMP.* Next is the Home Activity section, which also begins with an introductory letter to parents/guardians. Subsequent home activities may be reproduced and cut off, one at a time, and sent home as appropriate. The remaining blacklines coordinate with lessons in the four strands, N, L, G, and W. They are organized in order, by strand.

McREL

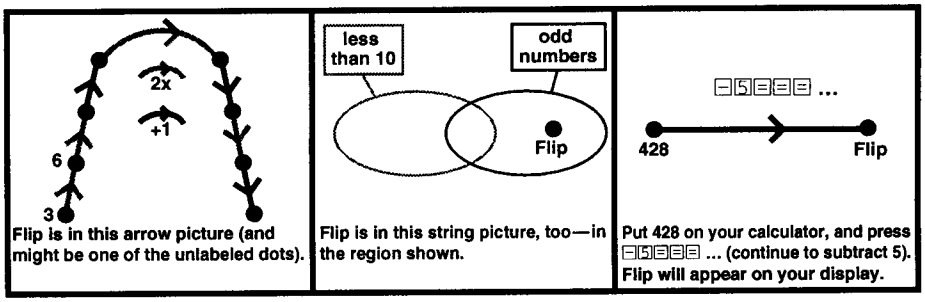
A LETTER TO PARENTS ABOUT *CSMP*

The *Comprehensive School Mathematics Program* (*CSMP*) is the mathematics program we use in your child's class. It is difficult to describe in a letter *CSMP*'s rich and exciting way of teaching mathematics. This, however, is a short introduction to *CSMP* and an invitation for you to visit your child's math class.

CSMP is different because it uses several "picture" languages. These languages make it easy for children to understand some very interesting but complex mathematical ideas. Students enjoy using these picture languages. At times during the year, we will send more information about these languages with examples from our *CSMP* lessons.

The developers of *CSMP* believe that mathematics is more than just arithmetic and that students learn best when they are solving interesting problems. They believe that students should understand, enjoy, and use their skills instead of just practicing them. With *CSMP*, students use their arithmetic skills while they play number games, solve detective stories, or build number "roads."

CSMP students use these clues to find Flip. Can you?



Children learn mathematical ideas and skills in different ways and at different times. For this reason *CSMP* teachers do not stick to one topic until everyone has learned it. Instead, the many concepts and skills are taught several times during the year. Students learn something during each lesson and master each skill when they are able.

In our math classes students participate in lessons with the whole class at times, with a smaller group at other times, and sometimes by themselves. Students are encouraged to talk about their ideas and to find different ways of solving a problem. The student workbooks and worksheets have easy, average, and hard pages so that all children can work on problems that are right for them.

Your child may be using a calculator for some math lessons. Calculators do not replace the need for arithmetic skills, but they do provide interesting mental arithmetic exercises. Students will use calculators to explore mathematical concepts and number patterns, or to practice math facts. They may also use calculators on problems involving difficult calculations or particularly large numbers.

We hope you will visit a *CSMP* math class soon. It can be an exciting experience.

Sincerely,

P.S. Flip, the secret number, is 13.

UPG-III HOME ACTIVITIES

Dear Parent/Guardian:

Activities that accompany various lessons in our mathematics program (*CSMP Mathematics for the Upper Primary Grades)* will be sent home with your child periodically. They will be called "Home Activities" rather than "homework," because we hope you will use them as an opportunity to become involved with your child in learning more about the *CSMP* tools, methods, and skills.

Some home activities will be follow-up or practice for a class lesson; others will be for enrichment or extension. Please keep all the activities and materials in the envelope provided. Some materials may be used more than once, and you may want to refer back to previous activities.

Sincerely,

N4

We have been using arrow pictures to show solutions to problems such as the following one:

> Imagine a package that needs 75¢ postage. You have 3¢, 5¢, and 7¢ stamps. How many of each type of stamp do you need to put on the package? Try to find several different solutions.

With your child, draw an arrow road from 0 to 75 with +3 (3¢ stamps), + 5 (5¢ stamps), and +7 (7¢ stamps), to show a solution to this problem.

N6

Try to find opportunities to practice counting by tens with your child. Observe and listen for patterns. Sometimes start at numbers other than 0. One way to do this is to teach a calculator to count by tens:

1) Put on the starting number.
2) Press [+][1][0].
3) Then press [=][=][=] and so on.

N8

Ask your child to describe the arrangement Pedro and Grandfather have when playing checkers (when Pedro wins he receives 3¢ from Grandfather; when Grandfather wins, Pedro pays him 2¢). Use this information to pose and solve problems such as the following:

> Pedro and Grandfather play exactly 10 games. Pedro gains 10¢. Explain (show) how this could happen.

N10

Find opportunities to practice multiplication facts with your child. Both oral and written practice can be helpful. The calculator is a nice tool to use to practice multiplication facts. For example, prepare the calculator to multiply various numbers by 5 (facts for 5x) as follows:

1) Start with 0 on the display.
2) Press [5][×][0][=]. 0 will be on the display again.
3) Enter any number and then press [=]. The calculator will multiply the number by 5.

N11

Your child is bringing home a multiplication table that was constructed in class. Ask your child to explain how it works. Then use the table to practice multiplication facts.

N12

Ask your child to explain how to play The Number Line Game. (To play, one person thinks of a secret number and places an empty box on the number line in the approximate position for the number. The other person tries to guess the number, obtaining feedback from the first person as to whether their guesses are more or less than the secret number.) Play the game with your child.

N16

Your child is bringing home a map of Nevada with distances between cities noted in kilometers. In class we solved several problems similar to the following:

- How long is the shortest route from Winnemucca to Tenopah?
- Plan a trip starting at Las Vegas that is approximately 1,000 km long.

Work with your chid to solve these problems.

N19

Here are some addition puzzles like ones we have worked on in class. Try these with your child. Put one-digit numbers in the boxes so that the addition is correct.

6 □ 3	1 5 □	2 □ □	4 5 □
+ 1 4 □	+ 3 □ 8	+ □ 7 6	+ □ □ 9
□ 6 9	□ 8 1	7 2 8	9 0 4

N24

In the classroom we have discussed sharing things equally (dividing). Pose several problems to your child involving sharing five candy bars equally.

How can you share five candy bars between two people in the family?
How can three of us share the five candy bars?
How can four people divide the five candy bars fairly?
Can five candy bars be shared fairly among five people?

N26

Your child is bringing home an example of an arrow road, used to do a subtraction calculation. Ask your child to explain how to build such an arrow road, and then pose similar problems to practice subtraction at home.

N27

In class we are using the Minicomputer to solve problems with decimal numbers. Ask your child to show an amount of money with real coins and then to put that amount on the Minicomputer. The accompanying letter explains the extension of the Minicomputer to include decimal boards.

N29

Find opportunities to practice adding several amounts of money to find a total. Grocery and menu items can provide real situations for this. After doing the calculation with paper and pencil, you and your child can check it with the Minicomputer or a calculator.

N34

Your child is bringing home a map of the state of Virginia with distances between cities noted in kilometers. In class we looked at the distances on the map, planned trips of various lengths, and compared distances. With your child, pose and solve some problems similar to the following:

- Which city is closer to Washington, D.C.—Roanoke or Norfolk? How much closer?
- Plan a trip starting at Norfolk that is approximately 650 km long.

N35

Ask your child to explain how an arrow picture can show that 2x followed by 2x is the same as 4x. Use the picture to calculate 4 x 19 and 4 x 52.

L2

Try to find some opportunities to do mental arithmetic with your child. Especially, do some calculations in two steps rather than one (i.e., use the idea of composition). For example, practice adding 7 by adding 5 and then 2 (46 + 7 = 46 + 5 + 2 = 51 + 2 = 53). Or practice adding 8 by adding 10 and then subtracting 2 (156 + 8 = 156 + 10 – 2 = 166 – 2 = 164).

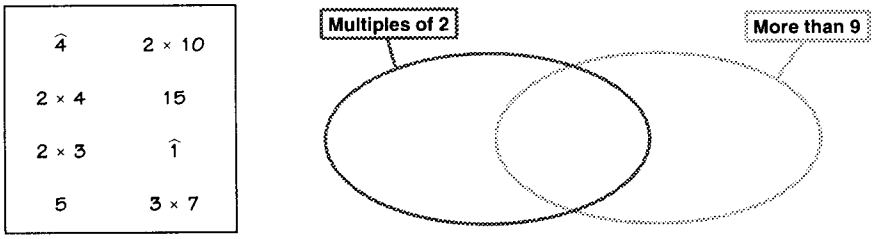
L3

The accompanying letter is about the use of strings (Venn diagrams) in mathematics. With your child, try to solve this problem using a string picture.

> There are 25 students in the Chess Club and 15 students in the Drama Club. Altogether there are 30 students in the two clubs. How can this be?

L6

Work with your child to place the numbers in the box in the string picture.



L11

Ask your child to retell the story of *The Little Donkey* and to explain how family relationships were shown in an arrow picture. Work with your child to draw arrow pictures of relationships among members of your family. Use a color key to explain what the arrows represent.

L12

Your child is bringing home red and blue cubes we used in a class game. Ask your child to explain the game, and then play it several times. Your child may want to keep a record of the scores to compare them to the outcomes of the class games. To play:

1. One player tosses the blue cube three times and adds the three numbers.
2. Another player tosses the red cube three times and adds the three numbers.
3. The winner is the player with the higher score.

L14

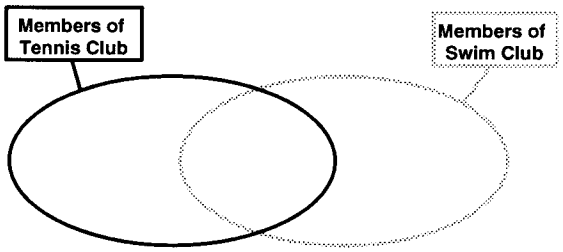
Your child is bringing home a worksheet [L14(e)] on which to record his or her daily routine of activities before and after school. Your child should include activities done alone (reading, for example) as well as those done with other family members (meals). Practice telling time by referring to the sheet and asking questions such as, How long until dinner? When will it be time for the game to be over? How long did the T.V. program last?

Your child has another worksheet [L14(d)] on which to record how long it takes to do various activities. Help your child time these activities and answer the questions.

L16

Try to solve this story problem with your child.

There are 15 people in the Tennis Club and 12 people in the Swim Club. Altogether there are 20 people in the two clubs. Explain how this can be.



G4

Provide opportunities for your child to measure objects found around the house in centimeters and in inches. Compare the number of centimeters to the number of inches for a particular object.

G8

Provide opportunities for your child to measure items found around the house using centimeters and meters, or inches, feet, and yards. Examine various measuring tools.

G12

Your child is bringing home a map of a cube. The map is what the cube might look like if you flattened it out. With your child, flatten other solids to see what their maps look like. For example, find a rectangular prism (a shoebox is one) and cut along some of the edges to flatten it out. An oatmeal box is a good example of a cylinder. Cut it along a seam to flatten it out. A coffee filter may be shaped like a cone and you can cut one to flatten it out.

G13

Your child is bringing home a square puzzle we made in class. Try to put the pieces together to make a square.

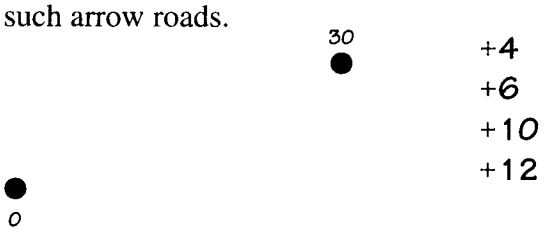
G14

In class we have examined how much of certain items it takes to make a pound. With your child, look for some different things that come in similar weight packages. Observe how different the sizes of the packages are.

W2

We have been doing a workbook in class called *Which Road?* The problems in the workbook involve drawing arrow roads between two numbers using one kind of arrow. Work with your child to find solutions to the following problem by drawing such arrow roads.

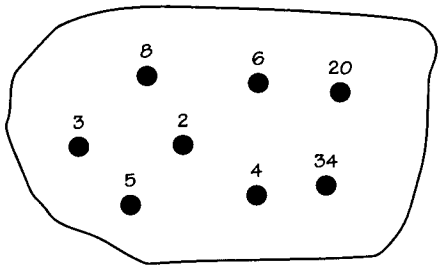
A store sells pencils in packages of 4, 6, 10, or 12. Can a person buy exactly 30 pencils buying all the same size packages?



W7

Here is a story similar to one we worked on in class. Work with your child to solve it. Use all the numbers in the string to fill in the blanks so that the story makes sense.

The entire Palmer family went to an amusement park. There are _____ members of the family, _____ adults and _____ children. Children's tickets cost $_____ each and adult tickets cost $_____ each. The family spent a total of $_____ for tickets.



For lunch, the Palmer's shared a box of chicken pieces. The box contained _____ pieces. Each family member ate the same number of pieces; they each had _____ pieces of chicken.

W11

Choose a number, such as 37, and with your child write many different facts for the number. For example:

$30 + 7 = 37$
$50 - 13 = 37$
$(4 \times 9) + 1 = 37$

W12

Your child is bringing home the story-workbook *Rollerskating 37* to share with you. Look it over together. Ask your child to explain how it was used in class.

W15

Here is a detective story from our class. With your child, work out each clue to discover the secret number. Tomorrow in class, we will reveal the secret.

(Teachers: Copy a detective story written by a student, the class, or you in the space below.)

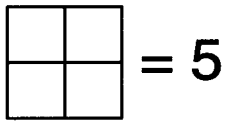
N3(a)

Dear Parent/Guardian:

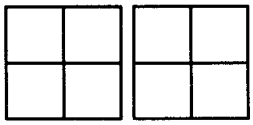
Your child has been learning to use the Papy Minicomputer in mathematics. This simple abacus allows children to become familiar with numbers. Using the Minicomputer, they work on the concepts of addition, subtraction, multiplication, and division before they are able to do the calculations routinely. Also, the Minicomputer is used to do mental arithmetic and to investigate how numbers work. The back of this page explains how the Minicomputer models our usual decimal system and works with place-value concepts.

Ask your child to color the squares on the Minicomputer to show you how the boards look. Then ask him or her to show you how to put numbers on the Minicomputer and read them. Objects such as pennies, dried beans, game chips, or paper clips may serve as checkers.

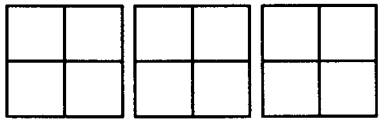
Put these numbers on the Minicomputer.

 = 5

5

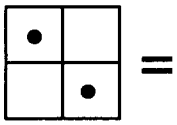
 = 28

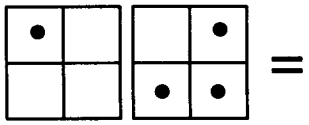
2 8

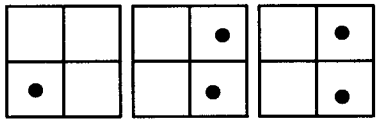
 = 137

1 3 7

Read the number on the Minicomputer.

 =

 =

 =

As the year progresses, you and your child can use the Minicomputer to solve a variety of problems. We hope you find this information helpful.

Sincerely,

N3(b)

THE PAPY MINICOMPUTER

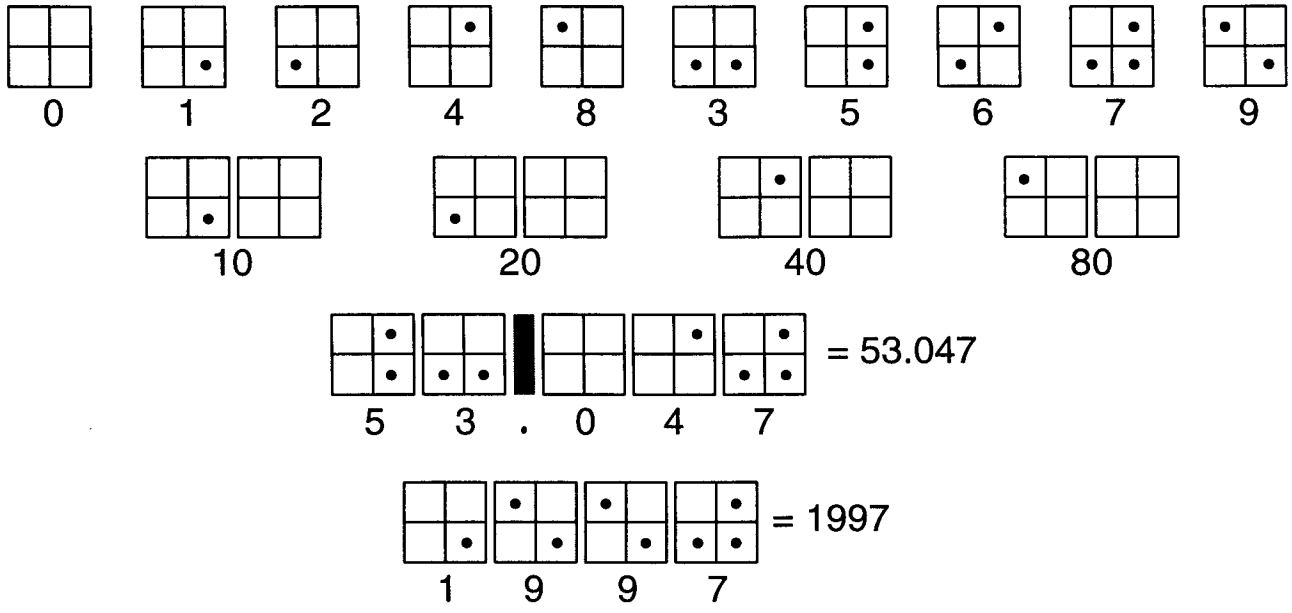
The Papy Minicomputer, a kind of abacus, models the positional structure of our system of numbers and hence lends itself as a powerful tool in arithmetic. The Minicomputer consists of brightly colored boards and a set of checkers. Each square has a numerical value.† These are the values on the ones board.

Brown	Purple
8	4
Red	White
2	1

As you move to the next board to the left, you have the tens board with corresponding values; the next board to the left is the hundreds board with corresponding values; and so on.

8,000	4,000	800	400	80	40	8	4
2,000	1,000	200	100	20	10	2	1

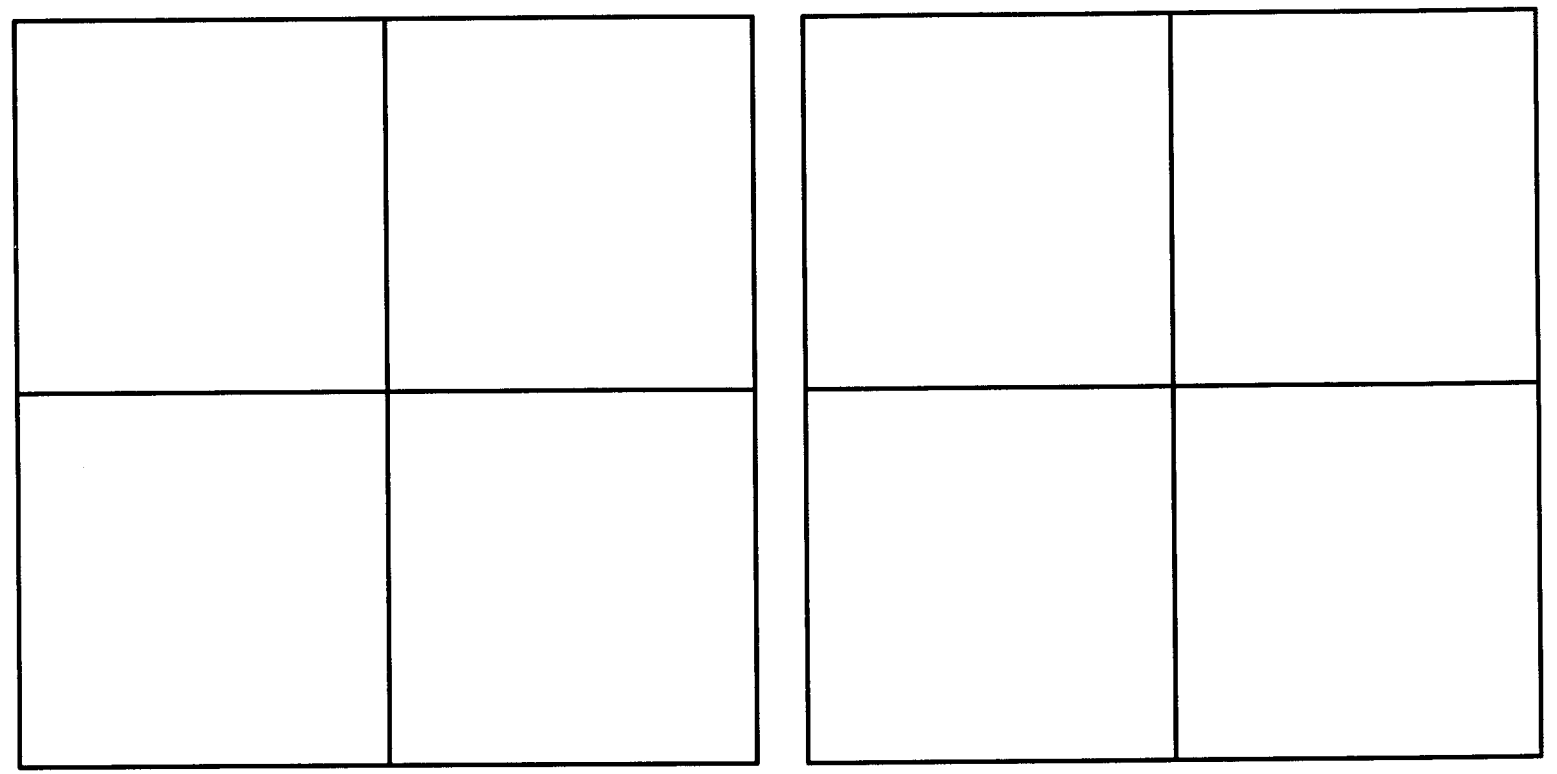
A number is put on the Minicomputer by placing checkers on its squares. A checker assumes the value of the square it is on. If several checkers are on the Minicomputer, the number is the sum of the values of the checkers. A number can be put on the Minicomputer in a variety of ways, but the representation that uses at most one checker on each square and uses checkers to represent a digit 9 or less is usually the easiest to read. In this case, we say that the number is in *standard configuration.* Standard configurations for the numbers 1–9 become as familiar to the students as the usual numerals so that they no longer need to do mental calculations for such configurations.

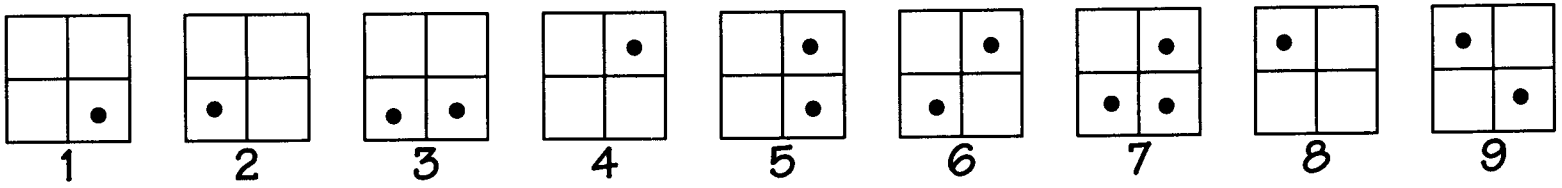


†The values of the squares are not written on the boards; learning them is part of becoming acquainted with the Minicomputer.

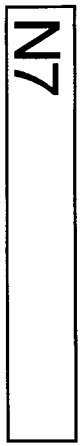
N3(c)

Papy Minicomputer





Twos	Threes	Fours	Fives	Sixes	Sevens



Eights	Nines	Tens	Elevens	Twelves

N9

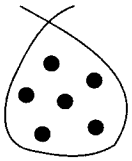
Dear Parent/Guardian:

Your child has heard a story called "Eli's Magic Peanuts." Magic peanuts give us a model for introducing the concept of negative numbers. The story in brief is the following:

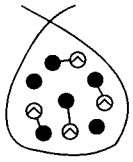
There is an elephant named Eli who is always hungry. Eli's favorite food is peanuts. He likes peanuts so much that he always carries a little bag in which to collect peanuts wherever he goes. One day, while out walking, Eli spots a strange peanut bush he has never seen before. Eli does not know it, but the peanuts from this bush are magic!

Eli gathers some of the magic peanuts and puts them in his bag with some regular peanuts.

Whenever a magic peanut comes in contact with a regular peanut, both peanuts suddenly disappear.

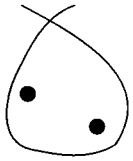


Eli's bag with 6 regular peanuts



...with 6 regular peanuts and 4 magic peanuts

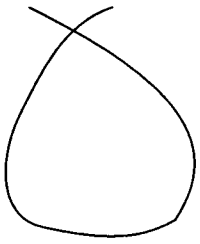
When Eli returns home he is hungry from walking all day. He decides to eat the peanuts. When he opens his bag, he is surprised because there are just two regular peanuts. The rest have disappeared.



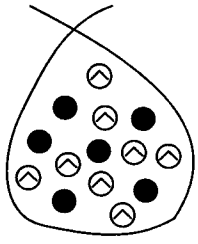
$6 + \widehat{4} = 2$

The story continues using other combinations of numbers and with episodes that bring out properties of negative numbers.

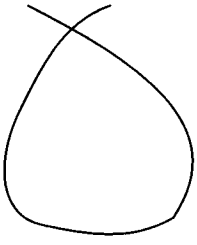
Ask your child to help you complete these number sentences.



$5 + \widehat{2} =$



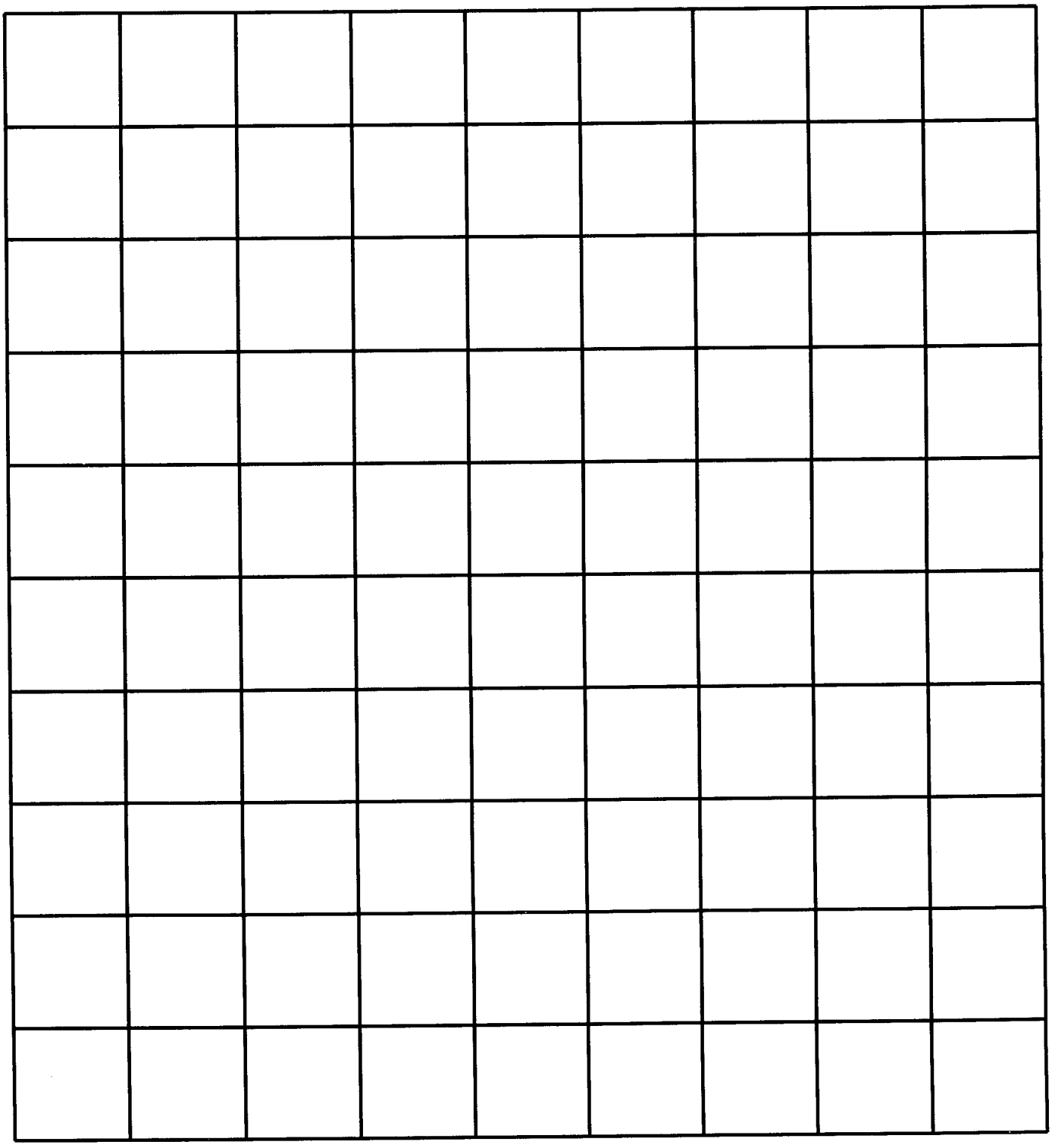
$6 + \widehat{8} =$



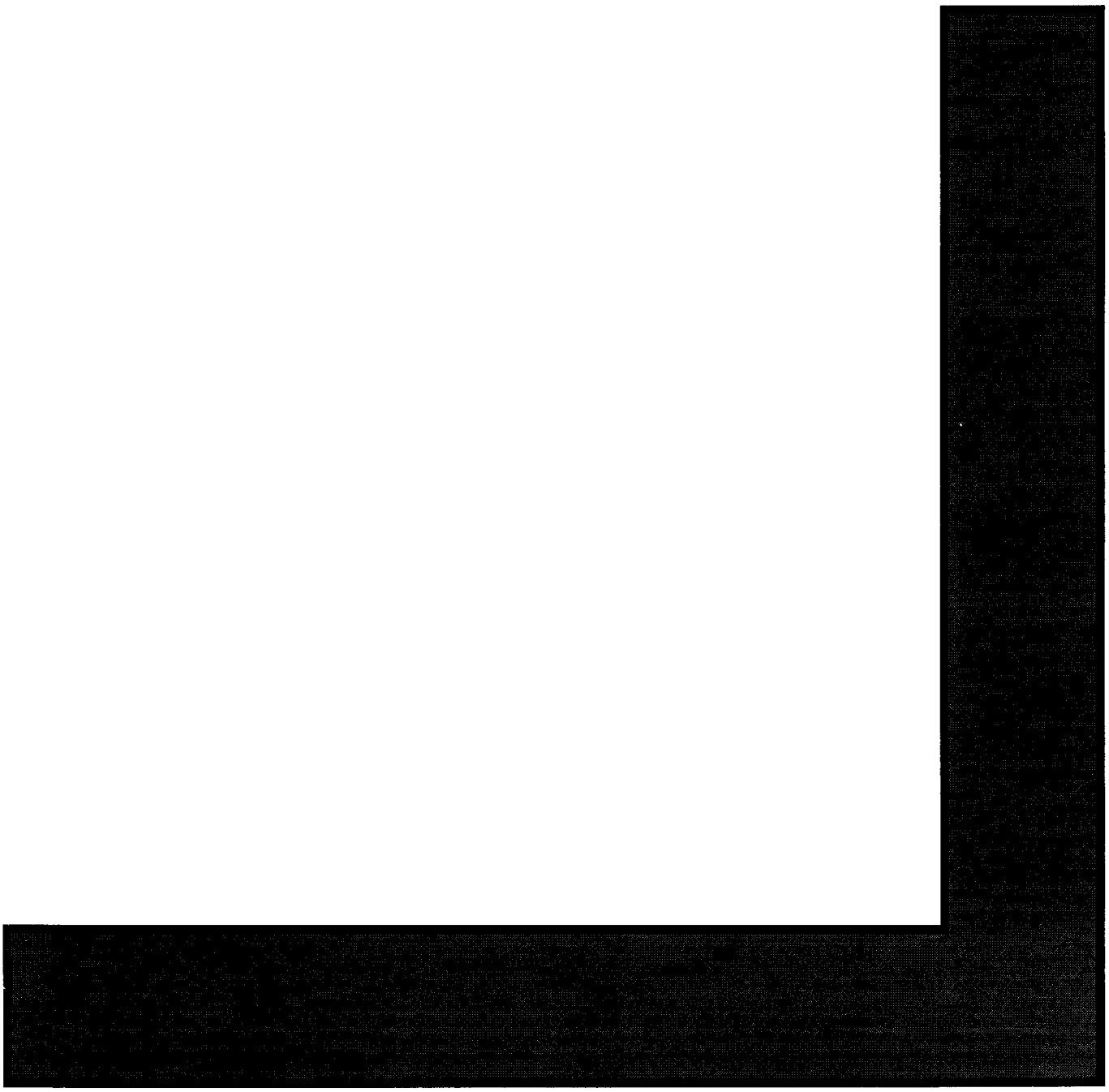
$4 + \widehat{4} =$

Sincerely,

N11(a)



N11(b)



N11(c)

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

N11(d)

Dear Parent/Guardian:

The learning of basic number facts is an important part of any mathematics program. We will be working on this in many ways:

- using concrete objects to model numbers and number combinations;
- counting by various numbers;
- labeling dots in arrow pictures;
- solving problems that require number facts;
- making connections (related facts) and observing patterns; and
- playing games with numbers.

You will find that your child is being encouraged to learn basic number facts in some of the home activities we suggest and in a variety of problems in workbooks.

As you work with your child, you can encourage the learning of basic facts. Look for interesting ways to do this. For example, calculators and computer programs are fun for some while others will like flashcards or mental games. Most children like to use numbers in real and meaningful family tasks. We will try to make suggestions regularly in our home activities. Home practice on basic number facts, like any skill, is important.

Sincerely,

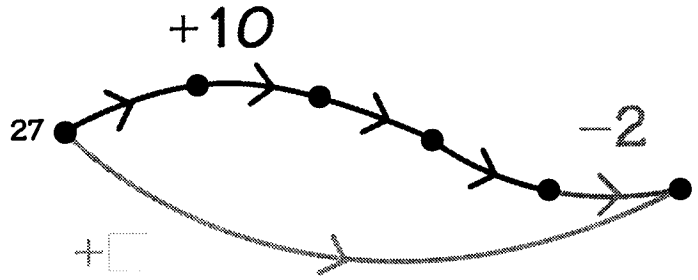
N14

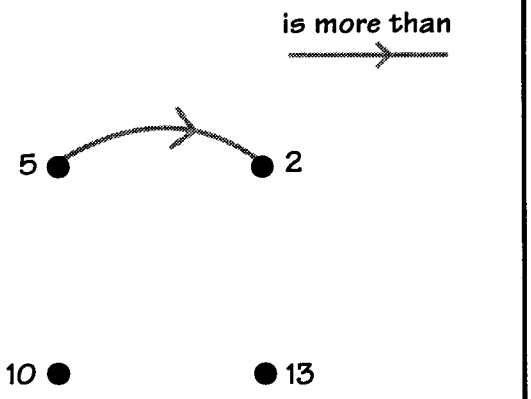
Dear Parent/Guardian:

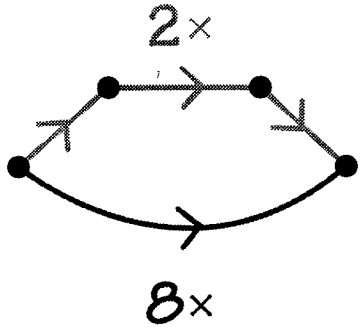
We have been using arrows and arrow pictures in some of our math lessons. You probably have seen papers coming home and wondered about the new art. Since arrows are used everywhere in our daily lives—signals, advertisements, directions, and so on—why not use them in mathematics?

Arrow diagrams are an important teaching aid in our mathematics program because they are a pictorial way of showing relationships. Relations play a central role in mathematics, and arrows provide a vivid and concrete way to understand them.

Here are a few examples of the way arrows picture relationships. Ask your child to help you label the dots or draw more arrows.







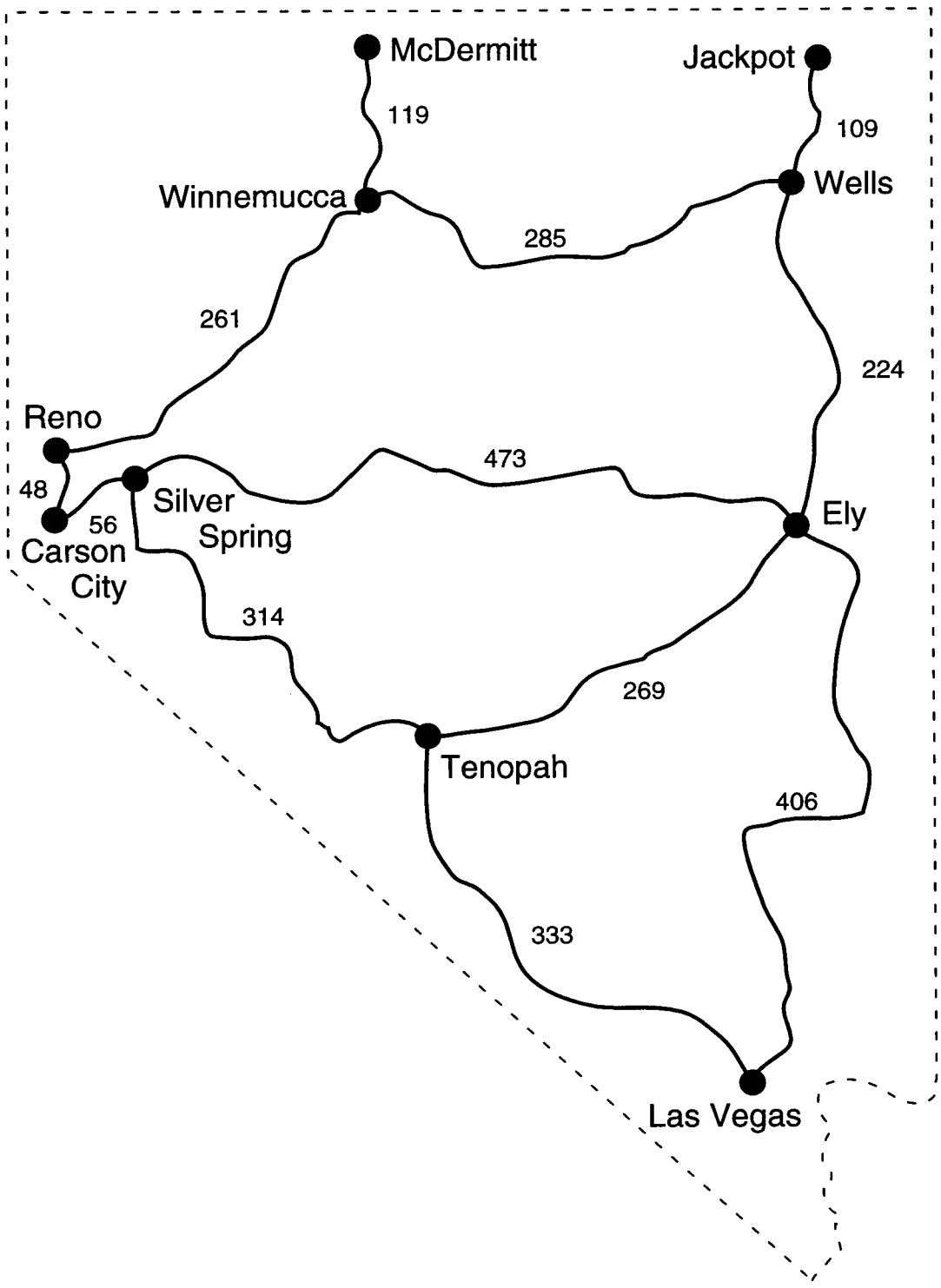
We hope you can see from these examples that arrow pictures are fun to use in mathematics.

Sincerely,

P.S. Your child may like to show you how to build an arrow road between two numbers using as few arrows as possible. For example:

- Build an arrow road from 0 to 53 using +10 and +1 arrows.
- Build an arrow road from 17 to 41 using +10 and +1 arrows.

N16


McDermitt
Jackpot
119
109
Winnemucca
Wells
285
261
224
Reno
473
48
Silver
Spring
Ely
56
Carson
City
314
269
Tenopah
406
333
Las Vegas

N18

Dear Parent/Guardian:

Developing mental arithmetic skills is just as important as paper and pencil arithmetic skills, so we incorporate mental arithmetic often in our math lessons. Mental arithmetic is important because it enables your child to recall math facts, to be aware of number patterns in arithmetic, and to review a variety of concepts.

You, too, can work on mental arithmetic with your child at home. It can be done whenever you have a free moment with your child—in the car, during a walk, at the dinner table, or before bedtime. Try to make your mental arithmetic activities short and fast-moving. Here are some sample sequences of math facts.

8 + 7 = ?	3 + 10 = ?	10 − 1 = ?	4 + 4 = ?
18 + 7 = ?	13 + 10 = ?	10 − 2 = ?	2 × 4 = ?
8 + 17 = ?	23 + 10 = ?	10 − 3 = ?	10 + 10 = ?
18 + 17 = ?	53 + 10 = ?	10 − 4 = ?	2 × 10 = ?

Another mental arithmetic game is the Number Line Game. To play, choose a secret number between 1 and 100. Let your child guess your number. After each guess, respond by saying, "My secret number is more (or less) than ____ (the guess)." Your child should use this information to make a next guess until the secret number is discovered. Occasionally, let your child choose the number while you guess.

To play another game, select a number and take turns making up facts for that number. For example, suppose you select the number 12. Some facts for 12 would be 10 + 2, 2 x 6, 15 – 3, ½ x 24, and so on.

Many counting activities are also good mental arithmetic. For example, practice counting by threes, fives, tens, and so on. Vary the counting by sometimes starting at a number other than 0 or by counting backward.

Have fun practicing mental arithmetic!

Sincerely,

N19

Dear Parent/Guardian:

We are continuing to use a paper/pencil method (algorithm) for addition in our math class, and the addition puzzles below are designed to focus on understanding the method. Of course, this is not the beginning of our work on the addition concept nor on addition problems. In fact we believe that earlier experiences with concrete objects, with the Minicomputer, with mental arithmetic, and so on have made the paper/pencil method mostly just another way of recording. The algorithm suggests we use a sequence of steps, and those earlier experiences help us understand reasons for the steps. At this time our instruction emphasizes the meaningful use of addition in problem contexts. Home practice will further help your child.

In doing addition calculations at home, remember that the paper/pencil method is only one. Sometimes we might better use mental methods or a calculator or a number pattern. We hope that a variety of methods will help children develop the ability to check their work and recognize reasonable answers. We hope also that paper/pencil will not inhibit a child's desire and/or ability to estimate, do mental arithmetic, use patterns, and so on. Calculation should be a tool for solving interesting problems rather than simply a chore done for its own sake.

Sincerely,

Addition Puzzles

Fill in the boxes with one-digit numbers.

7 2 □	3 9 5	□ 3 4	1 □ 8 4
+ 1 □ 5	+ □ □ 9	+ 6 □ □	+ □ 5 2 □
□ 7 1	5 2 □	8 0 2	5 9 □ 6

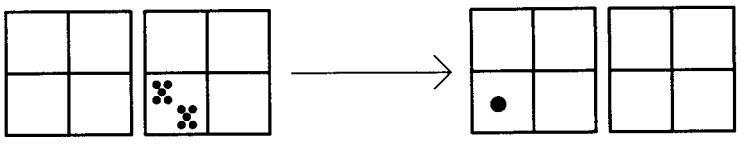
N23

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99
100	101	102	103	104	105	106	107	108	109

N25

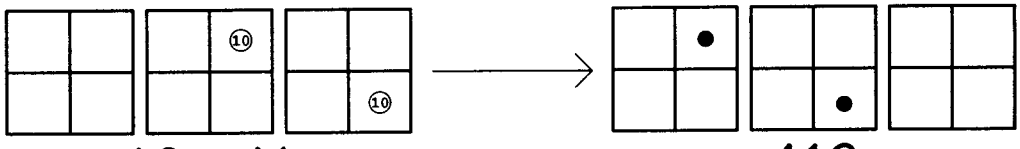
Dear Parent/Guardian:

Your child has been introduced to the concept of multiplying by ten through the Minicomputer. We began by placing ten checkers in a space on the ones board of the Minicomputer and making the appropriate trades.



10 × 2 = 20

We discovered that when we did that the answer would be shown by a checker on the same colored space one board to the left. We learned that the ten checkers meant ten times the number we began with. We have now begun to use a single "weighted checker" or "ten checker" which represents the ten checkers.



10 × 41 = 410

Using this model we can also do mental arithmetic and paper/pencil problems multiplying a number ten times. Have fun practicing this at home with your child.

10 × 8 = 80
10 × 80 = 800
10 × 800 = 8000

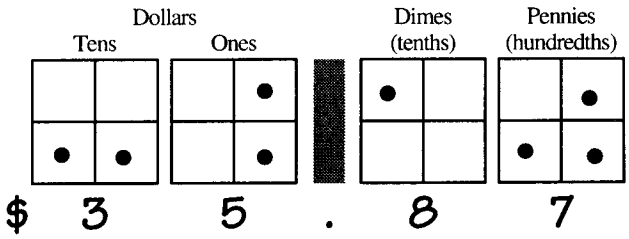
10 × 37 = 370
10 × 156 = 1,560

Sincerely,

N27

Dear Parent/Guardian,

We have extended the Minicomputer to include decimal places. Please review our earlier letters on the Minicomputer. Now we put a bar to the right of the ones board, and place boards to the right of the bar for decimal places. Most of the situations where we use decimal numbers involve money, so these boards are called the dimes (tenths) and pennies (hundredths) boards. For example,

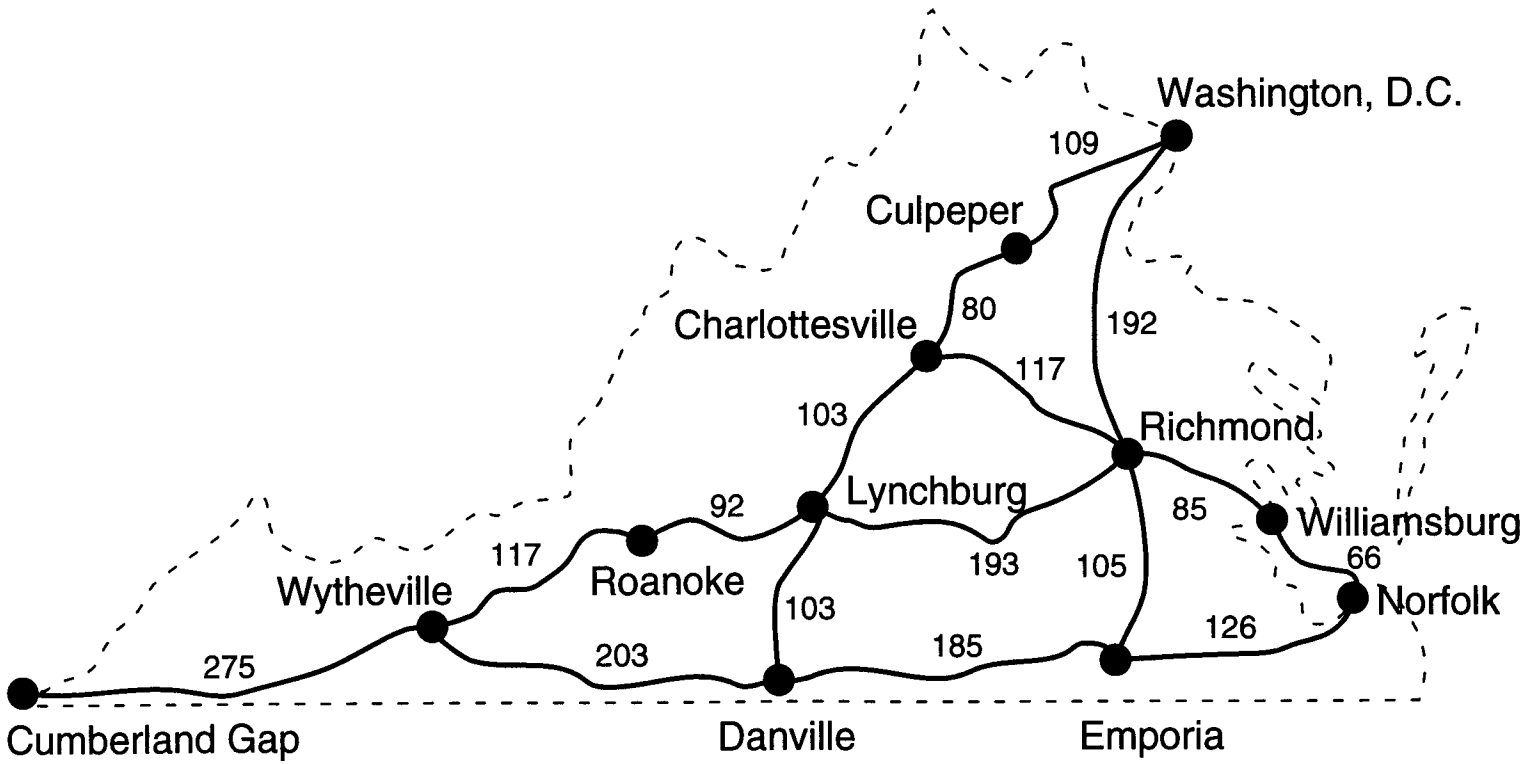


The trades we make on these new boards are just like those on the boards for ones, tens, hundreds, and so on.

You can similarly extend use of your home Minicomputer. Place a divider between two Minicomputer boards, and use the Minicomputer to represent decimal numbers and to do calculations with decimal numbers. For example, ask your child to count the amount of money in a small collection of coins. Then represent that amount of money on the Minicomputer. Add some coins to the collection, and find the new amount of money by adding on the Minicomputer. Or take some coins away from the collection and find the new amount of money by subtracting on the Minicomputer.

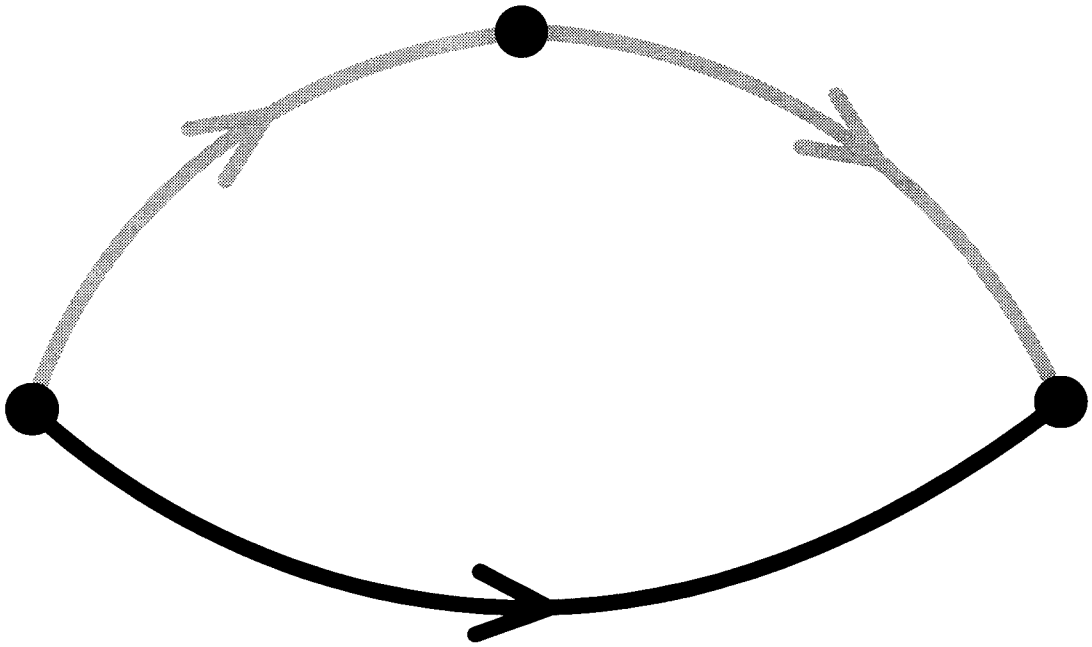
We hope you will enjoy using the Minicomputer to work with decimal numbers.

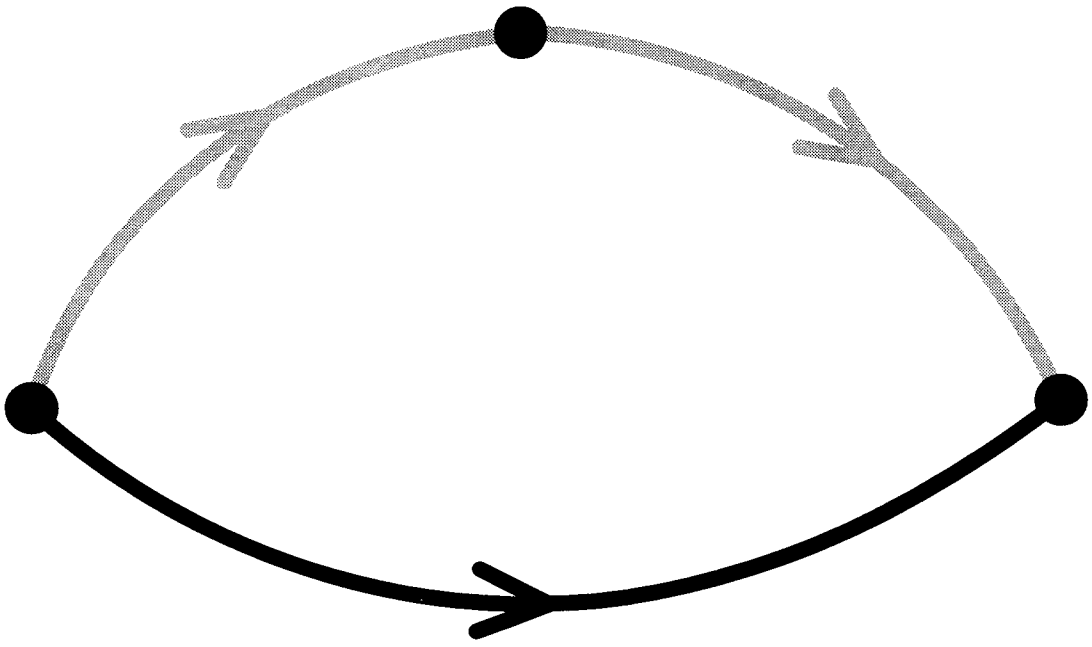
Sincerely,


Washington, D.C.
109
Culpeper
80
Charlottesville
192
117
103
Richmond
Lynchburg
92
85
Williamsburg
66
117
193
105
Wytheville
Roanoke
103
Norfolk
126
275
203
185
Cumberland Gap
Danville
Emporia

N34

N35





L3

Dear Parent/Guardian:

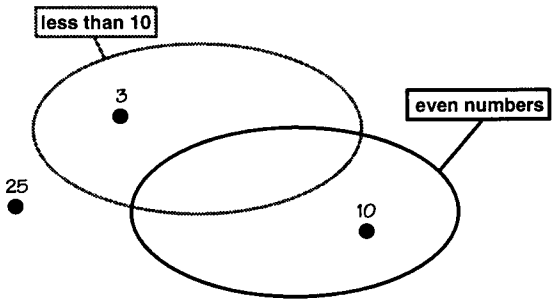
We have been using what *CSMP* calls the "language of strings" (or Venn diagrams) in classification activities. The students have learned to recognize this language by using actual loops of colored string or yarn. Now it has become mostly a picture language.

Using strings to classify helps students organize ideas while developing an understanding of concepts. Basically, the strings sort objects according to various attributes. An object is either in or out of a string. See the examples below.

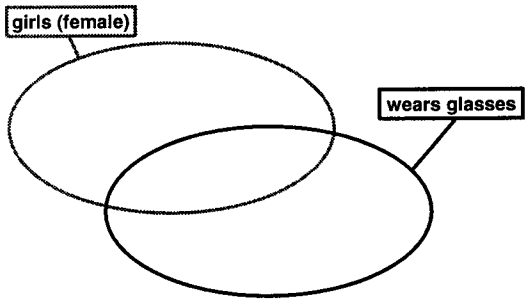
String pictures give us a way of recording and communicating about classifications. The ability to classify, reason, and extract information from classifications is an important skill for everyday life and particularly in understanding mathematics. The picture language of strings can help young minds to think logically and creatively, as well as to report their thinking, long before they have advanced verbal skills.

Here are a couple of examples of the use of strings in *CSMP.* Ask your child to help you do the following:

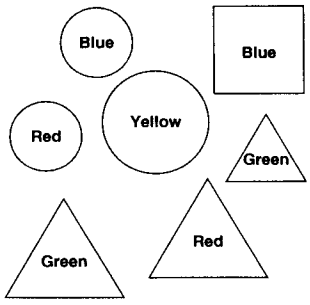
Place these numbers in the picture: 5 17 20 8 0 1

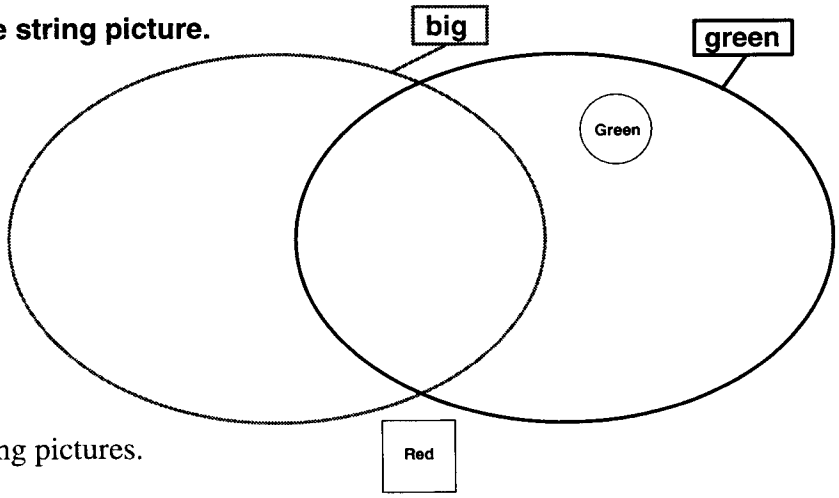


Place a dot for each member of your family.



Place these attribute blocks in the string picture.

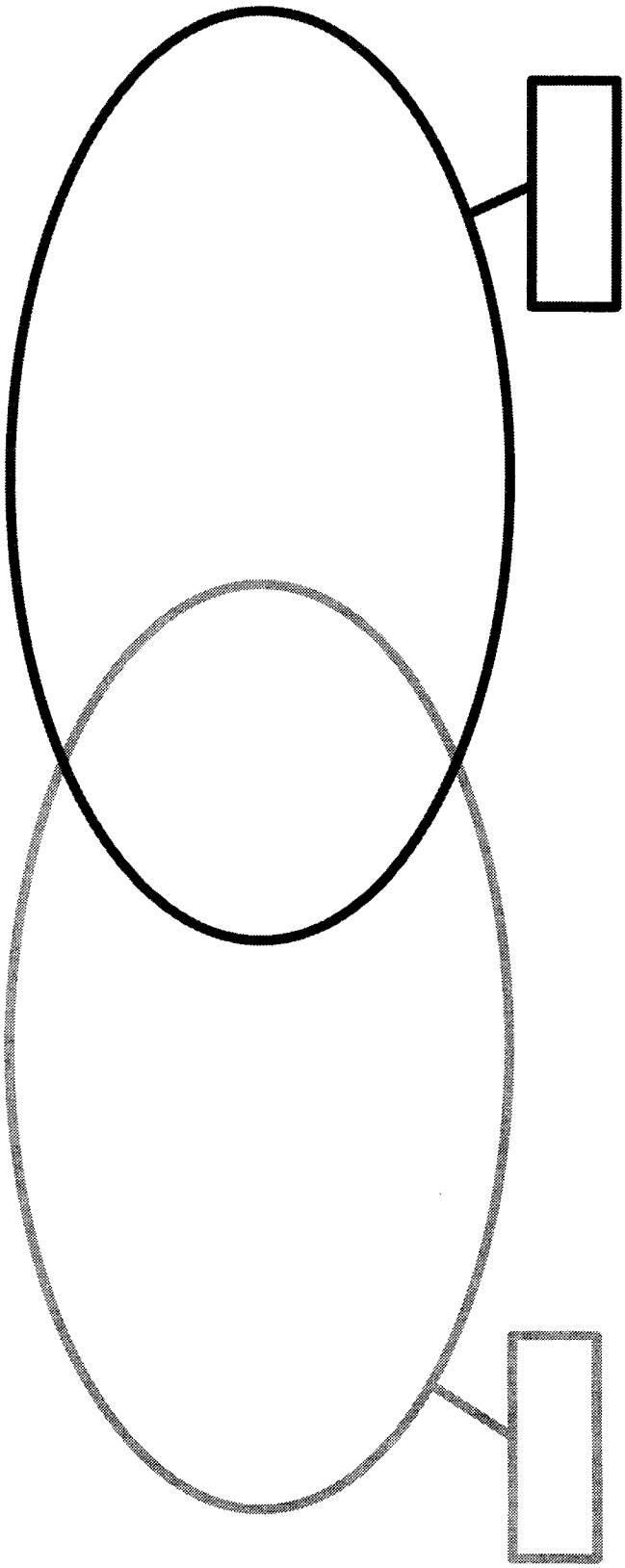




We hope you enjoy working with string pictures.

Sincerely,

L4(a)



L4(b)

Dear Parent/Guardian:

We have been using calculators at school to enhance many of our math lessons. Calculators are useful tools that can help us work on mental arithmetic skills (especially memorization of facts), pattern recognition, and problem-solving strategies.

You may want to use a calculator with your child at home. The following are examples of the kinds of calculator activities we have done in math lessons and are ones you may like to try with your child. In each case, we describe the activity or give just one sample problem.

- Turn on the calculator and check that 0 is on the display. Cover the display. Press [5] [+] [3] [=]. Ask what will be on the display, and then check.

- Teach the calculator to count by fours using the following steps:
  1) Put on the starting number.
  2) Press [+] [4].
  3) Then press [=] [=] [=] and so on.

  Describe the sequence of numbers you see on the display. Occasionally, predict the next number or the number you will see if you press [=] three more times.

  Note: You will need a calculator with an automatic constant feature for this example.

- Teach the calculator to count backward by fives from 100 to 0 using these steps:
  1) Put 100 on the display.
  2) Press [−] [5].
  3) Then press [=] [=] [=] and so on.

- Use the calculator to solve addition or subtraction problems. In this case, you may first estimate a solution and then use the calculator to check how close your estimate was.

- Teach the calculator a secret rule and let your child try to guess the rule. For example:

Rule	**To Prepare the Calculator**
Subtract 5	Press [5] [−] [5] [=]
Multiply by 3	Press [3] [×] [0] [=]
Add 4	Press [−] [4] [+] [4] [=]

  Each time you put a number on the display of the calculator and press [=], the calculator will show a new number—the result of using the rule on your number.

  Note: You will need a calculator with an automatic constant feature for this example.

We hope you and your child enjoy using a calculator for these and other activities.

Sincerely,

L10

Dear Parent/Guardian:

One context we use in math class for logical thinking and problem solving is a detective story. In the story there is a mystery number and students act as detectives using several clues to discover the secret number. The first clue usually gives many possibilities, and then other clues eliminate possibilities until there is just one. Students put several pieces of information together to find a solution. The clues may use a variety of ideas: coins, strings, arrows, the Minicomputer, a calculator, and so on. In this way we also have an opportunity to review and connect different concepts. There was an example of a detective story in the letter to parents about *CSMP* sent home near the beginning of this school year.

You may like to try making up detective stories to do with your child. You can use numbers or other things familiar to your child. Two examples are given here, but you may like your own better or your child may have some suggestions.

Secret Animal

Clue 1. It is a kind of bird.

Clue 2. Its name rhymes with *me*.

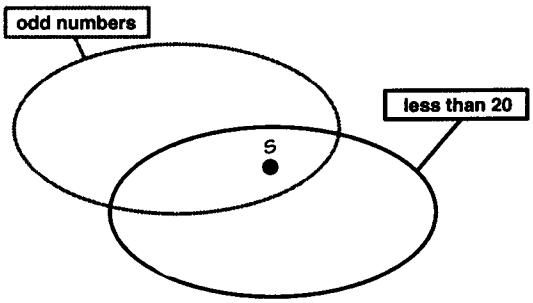
Clue 3. Tom is one.

Clue 4. There are many in the stores before Thanksgiving.

Answer: Turkey

Secret Number - S

Clue 1.



Clue 2. You say this number when you count by fives starting at 0.

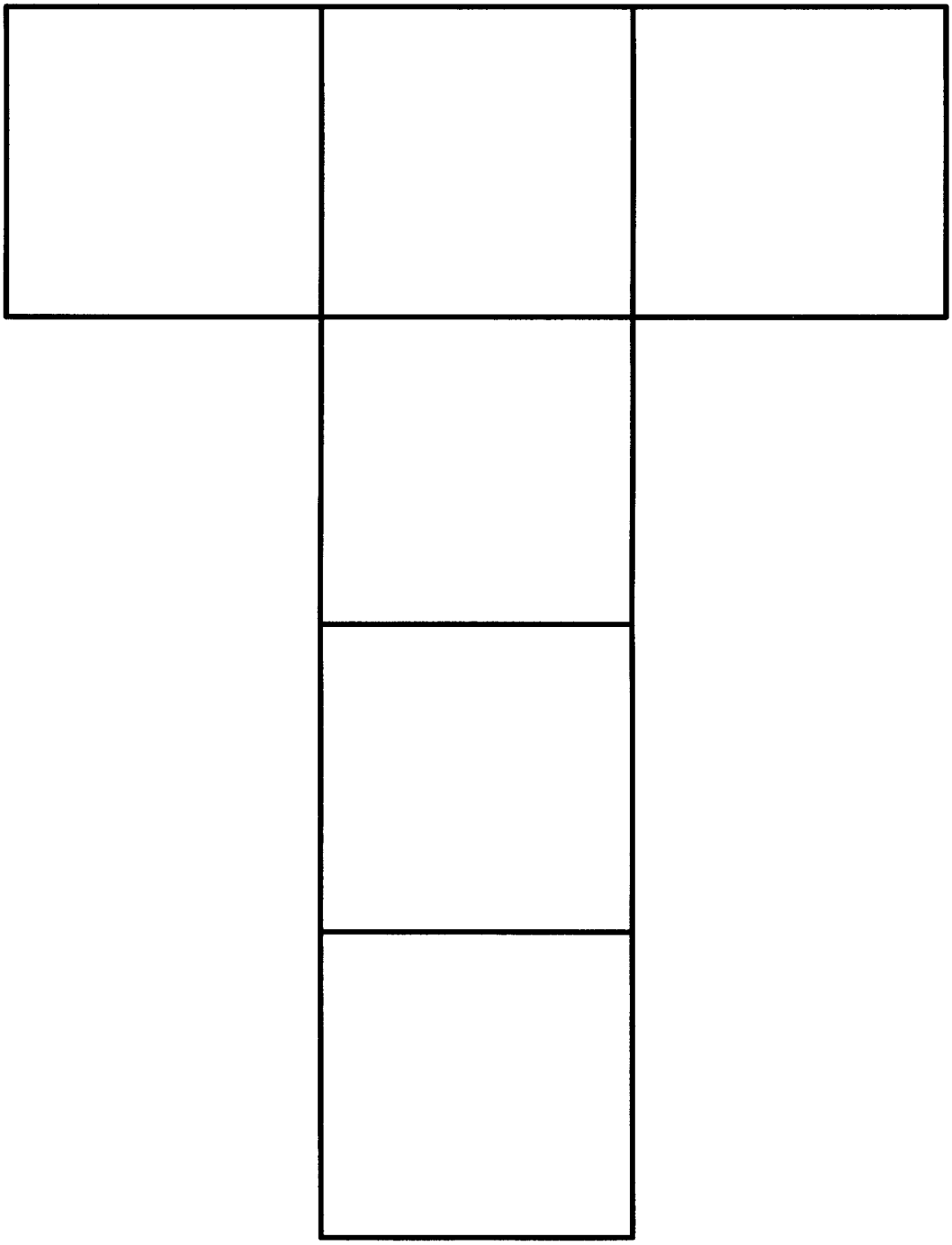
Clue 3. You cannot put this number on the Minicomputer with two checkers.

Answer: 15

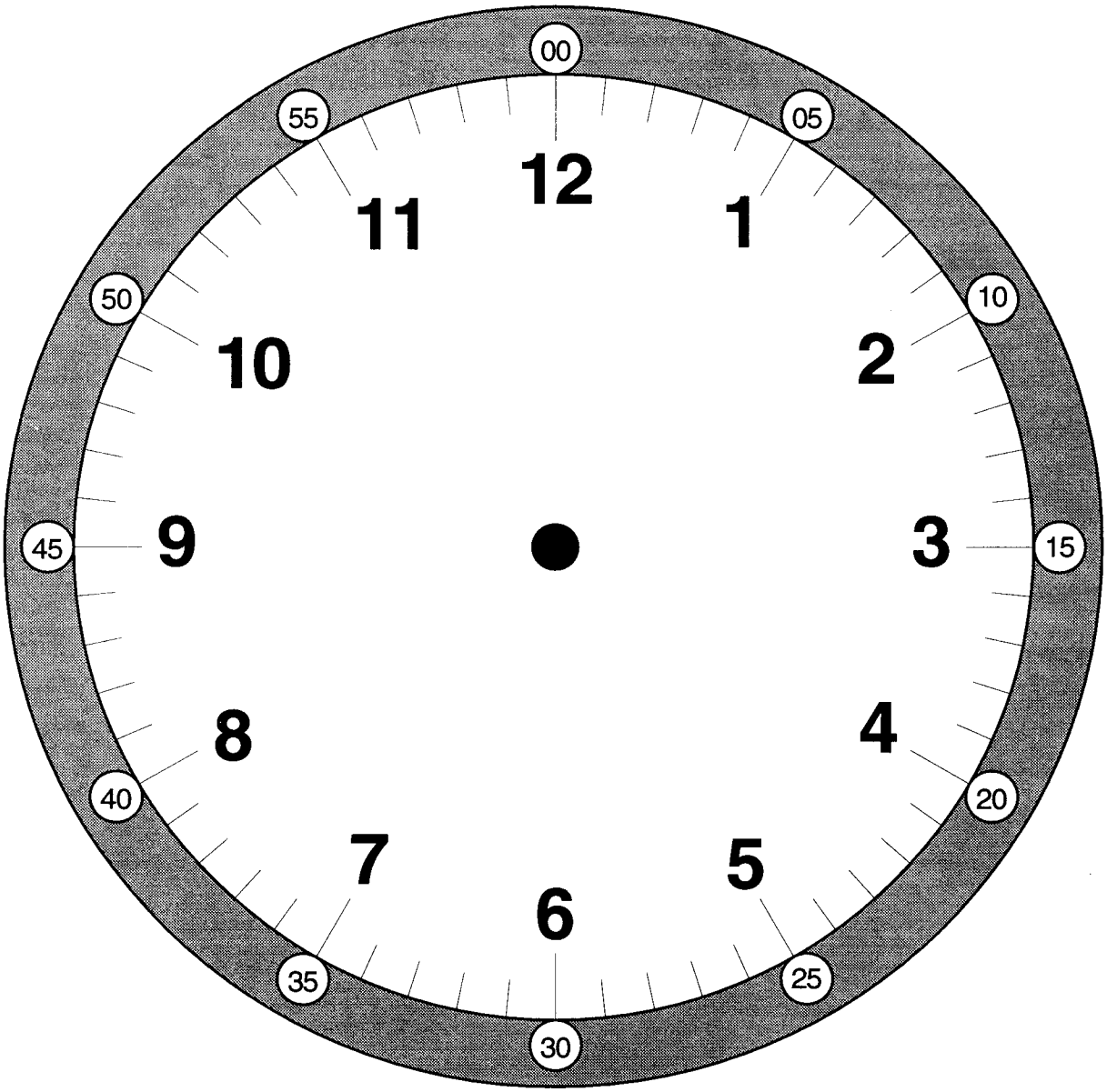
We hope both you and your child enjoy detective stories.

Sincerely,

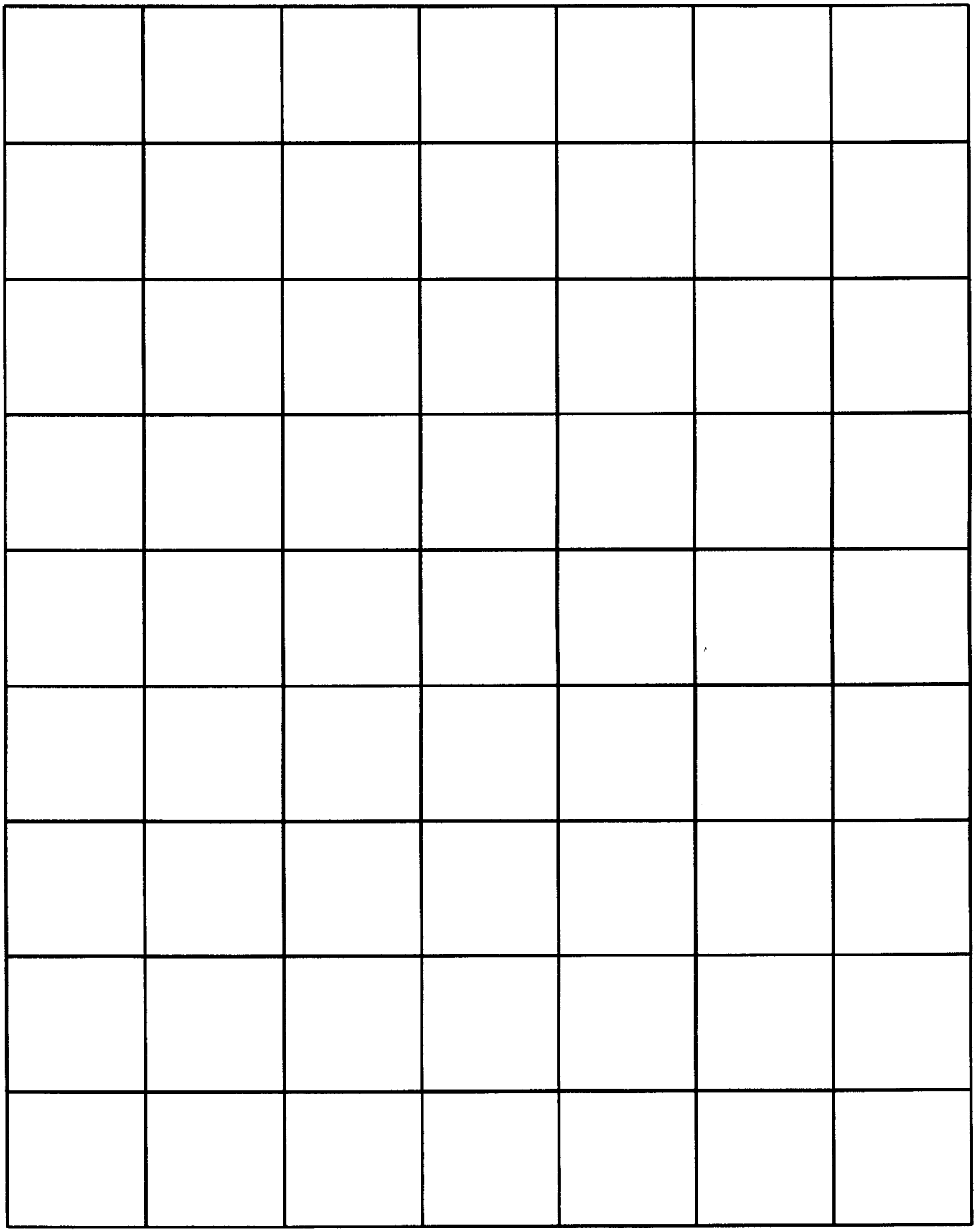
L12



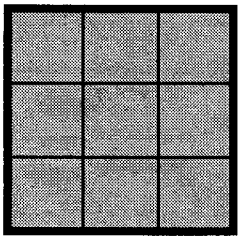
L14

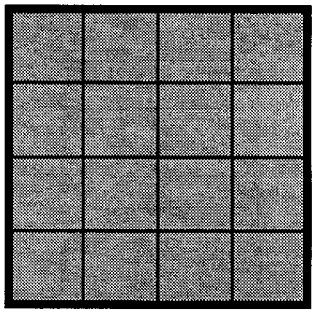


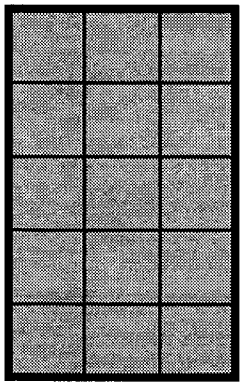
G3

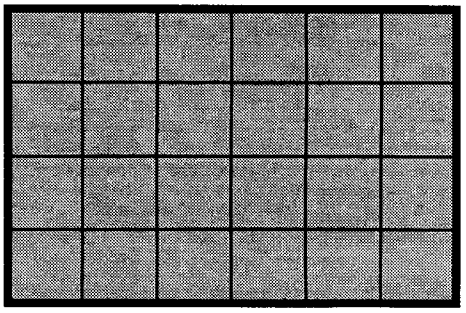


G6

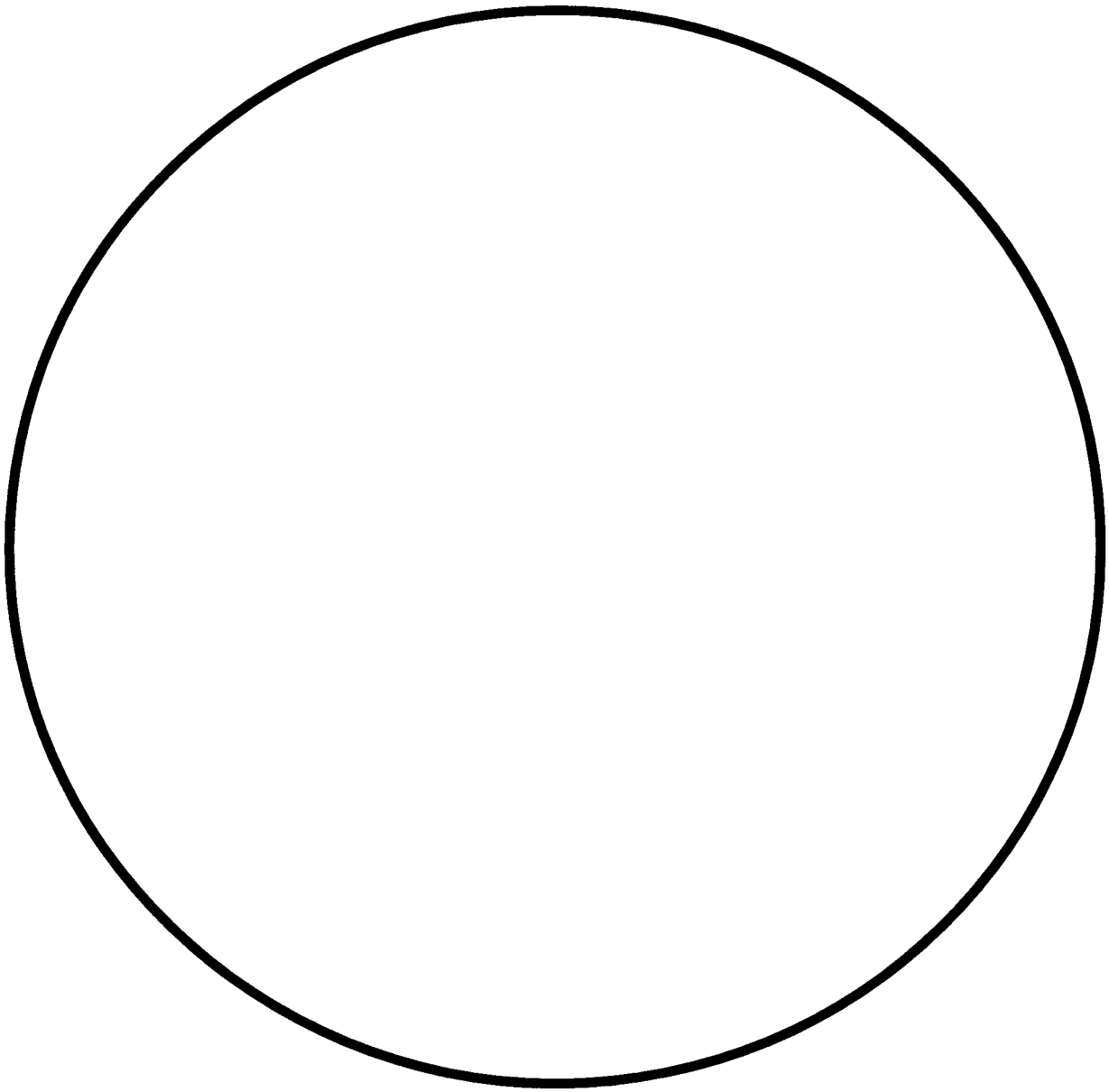




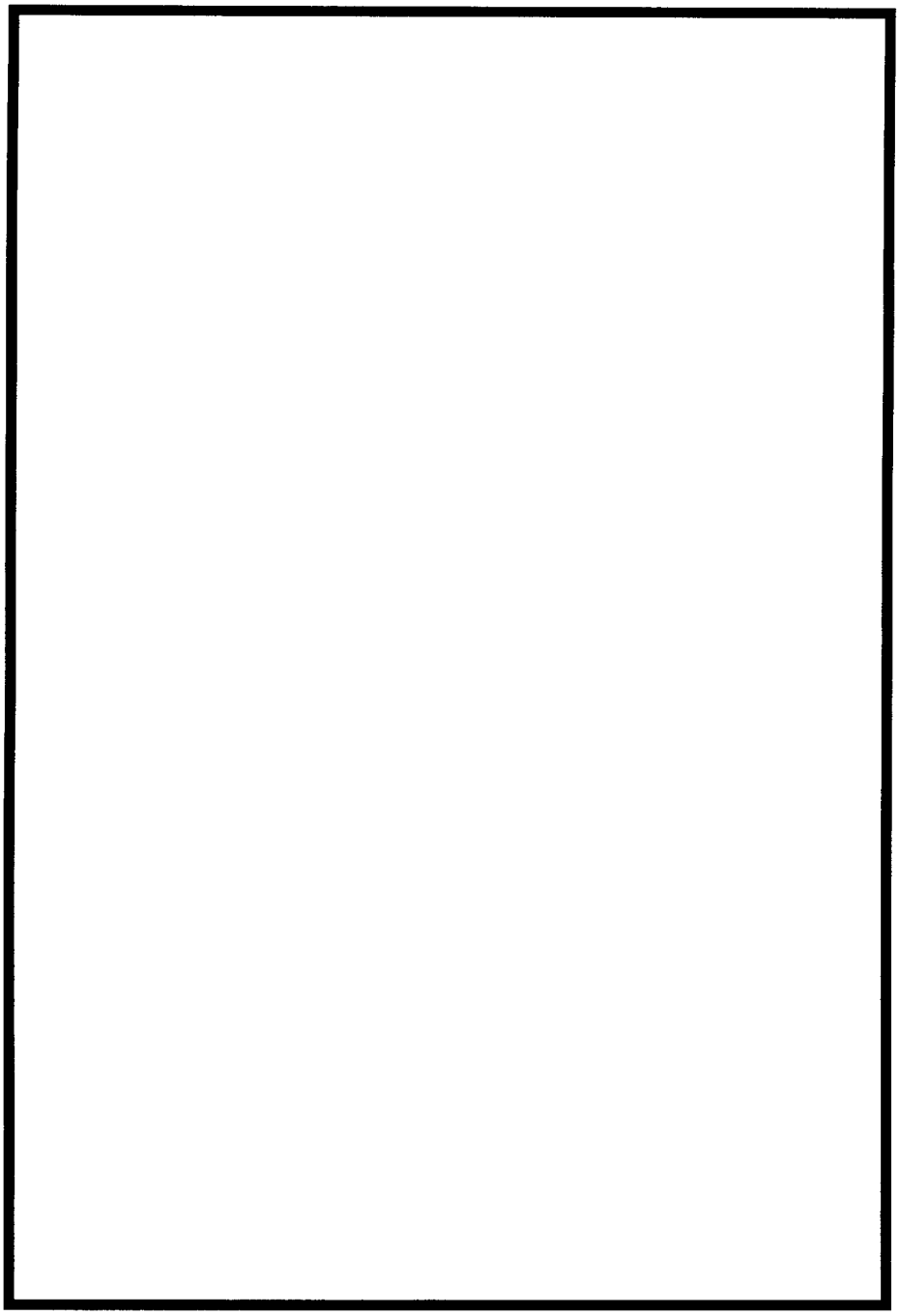




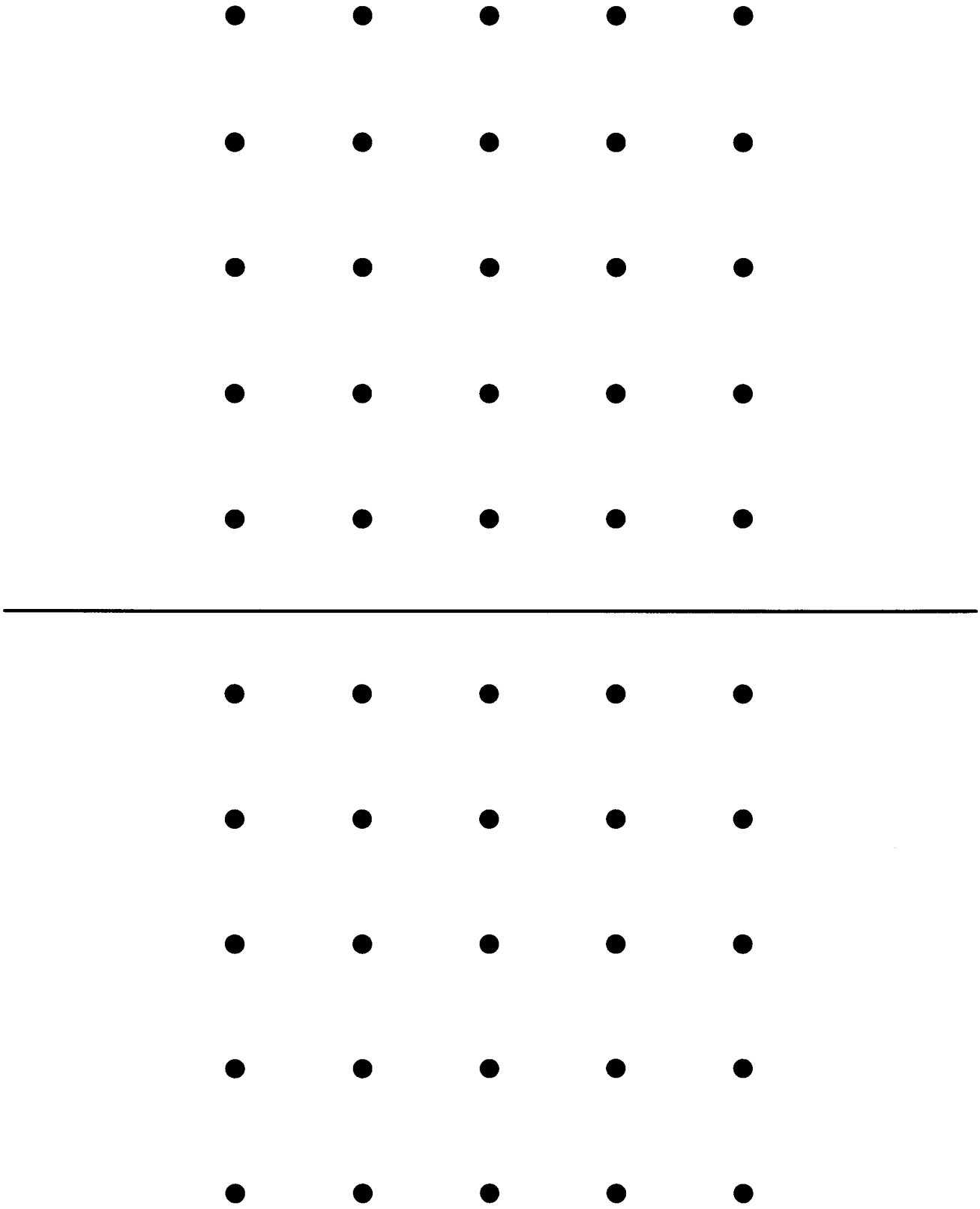
G10(a)



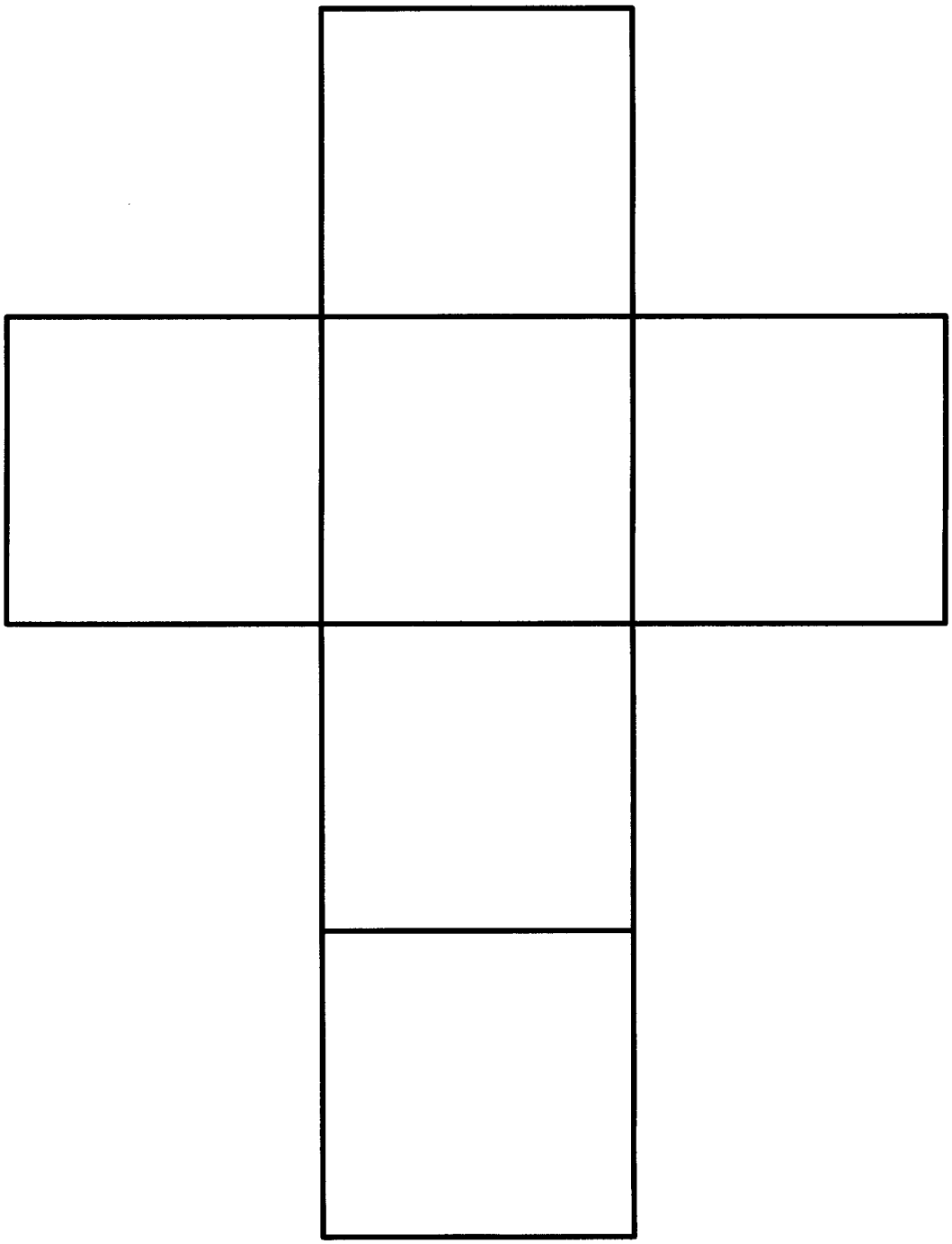
G10(b)



G11



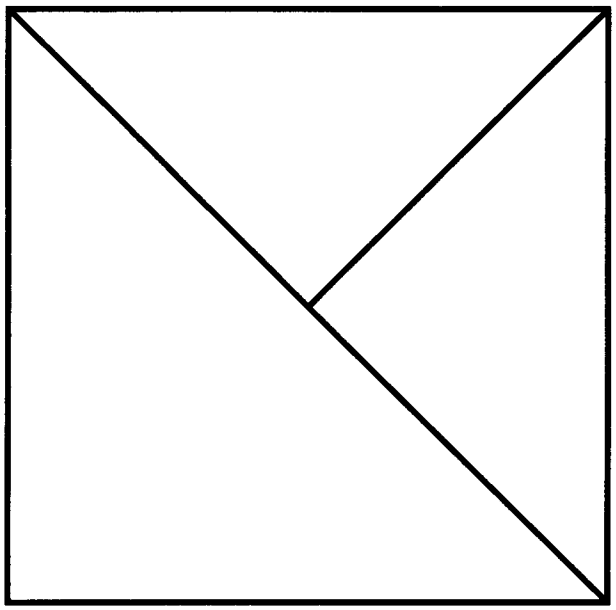
G12



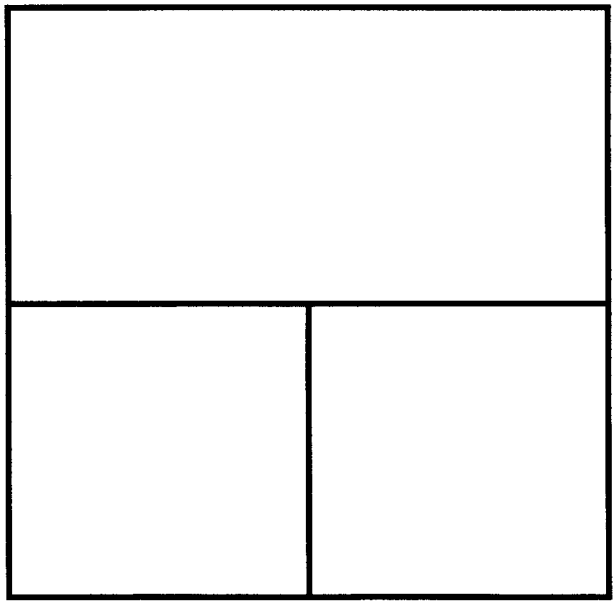
G13(a)

Three-Piece Square Puzzles

I.



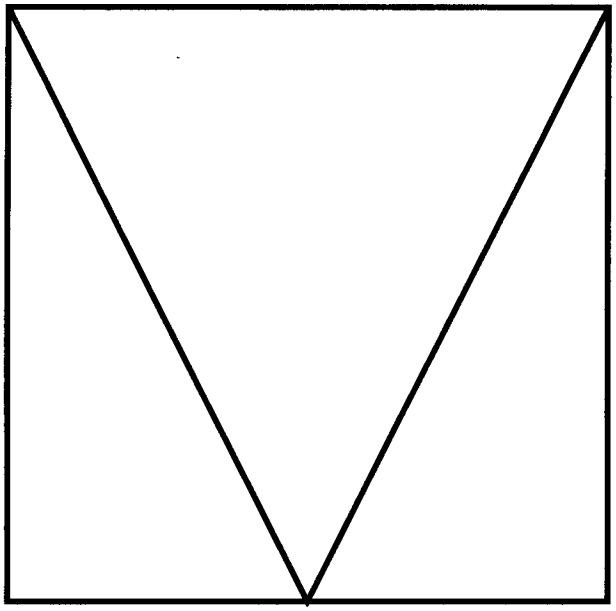
II.



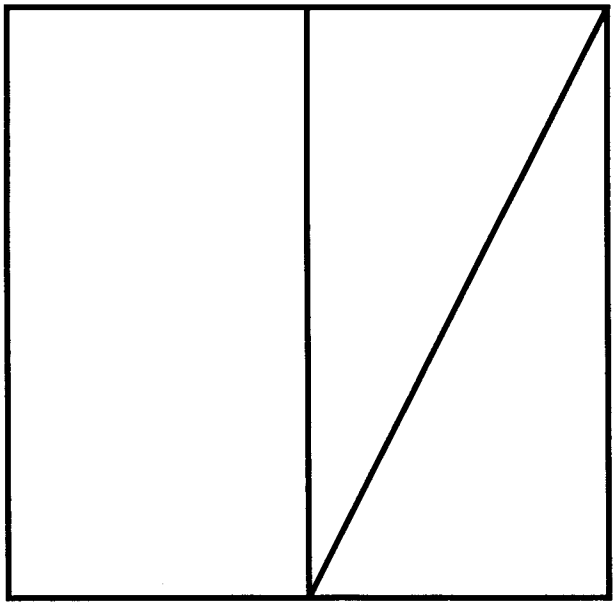
G13(b)

Three-Piece Square Puzzles

III.



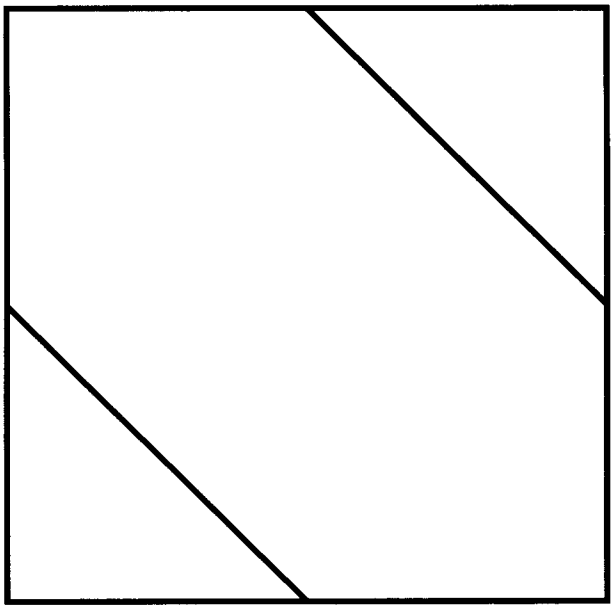
IV.

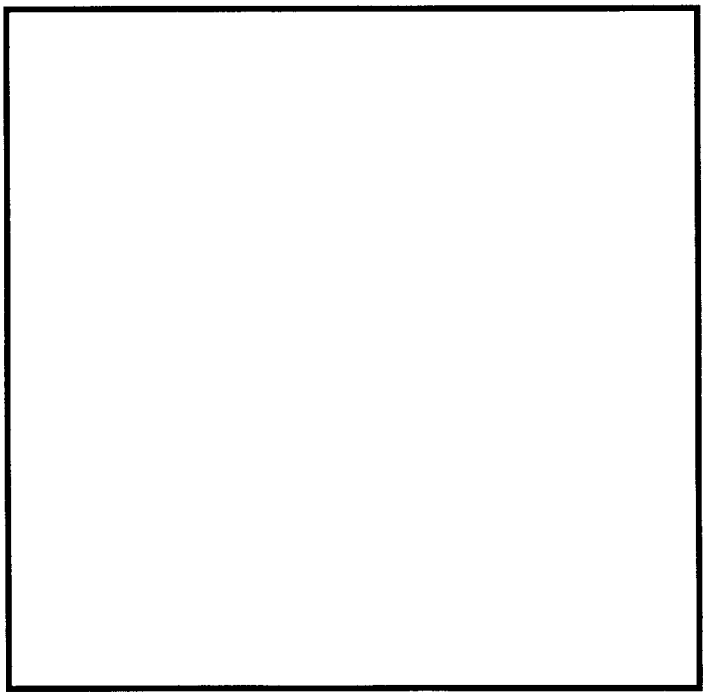


G13(c)

Three-Piece Square Puzzles

V.





W5(a)

Festival of Problems #1
(13-5866R)

Student Name _____
Date _____

			Responses
Counting/Sequence	p.4	(numeral chart)	45 _____
	p.21	(numeral charts)	41 _____
Arrows	p.3	(+2 with number facts)	23 _____
	p.5	(–2 with number facts)	23 _____
	p.10	(+10, +1 arrow road)	various _____
	p.12	(2x with number facts)	15 _____
	p.13	(red followed by blue)	7 _____
	p.16	(+5 with number facts)	15 _____
	p.18	(+5, –3 with facts)	30 _____
	p.20	(+10 with number facts)	28 _____
	p.25	(+9)	9 _____
	p.26	(2x, +1 arrow road)	various _____
	p.29	(½x)	8 _____
	p.30	(+7, –4 arrow road)	various _____
	p.31	(3x)	7 _____
Minicomputers	p.2	(3–28)	12 _____
	p.6	(22–504)	8 _____
	p.23	(20 and 100)	8 _____
	p.27	(25–930)	8 _____
Money	p.8	(coin combinations)	6 _____
	p.22	(story problems)	6 _____
	p.28	(coin combinations)	5 _____
Strings	p.9	(even numbers, >20)	7 _____
	p.24	(>10, <20)	5 _____
Computation	p.7	(multiplication)	8 _____
	p.11	(various)	12 _____
	p.14	(addition)	6 _____
	p.32	(addition)	8 _____
Detective Story	p.17	(Minicomputer, strings)	5 _____
Geometry	p.15	(½ of a shape)	4 _____
Data Analysis	p.19	(rock collection)	8 _____

W5(b)

Dear Parent/Guardian:

With this letter, we are sending home your child's *Festival of Problems #1* Workbook. It contains pages with problems from various areas of our mathematics curriculum. During the past couple weeks, the students have been working independently in this booklet.

Please be aware that the workbook pages become progressively more difficult. Time constraints and individual understanding, skills, and experiences will influence how much of the booklet a student completes. We do not expect every student to complete every page, especially since the last one-third of the booklet is designed for extra challenge. You may wish to discuss pages that were difficult for your child or practice some of these concepts at home.

Other workbooks will be sent home later in the year. These should give you an idea of some of the topics and concepts being introduced in our mathematics curriculum as well as help you monitor your child's progress.

Sincerely,

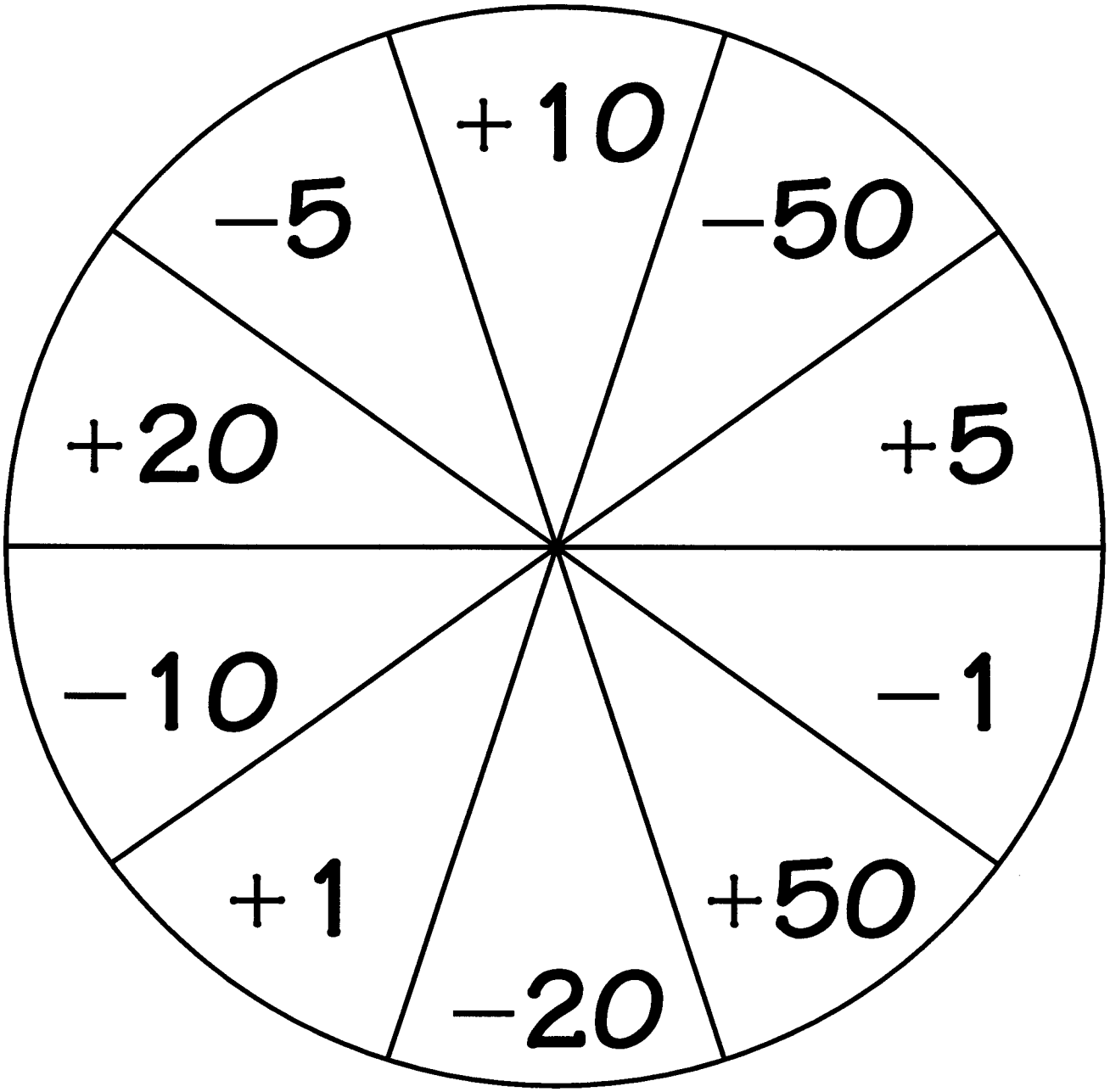
W7

Fishing for Numbers, Part III
(13-5882R)

Student Name _____
Date _____

			Responses
Arrows	p.2	(+3)	6
	p.4	(–1)	8
	p.6	(+5, +1)	8
	p.8	(+10)	9
	p.10	(2x)	8
	p.13	(+4, –1)	8
	p.15	(–4)	8
	p.16	(–2, +6)	5
	p.18	(2x, +1)	10
	p.19	(+5)	6
	p.20	(2x, +7)	5
	p.22	(+5, –2)	7
	p.24	(+3, +2)	9
	p.25	(more than)	4
	p.26	(+9, –23)	6
	p.28	(+36, +18)	5
	p.31	(2x, –10)	9
Minicomputers	p.3		8
	p.7		8
	p.14		8
	p.29		8
Strings	p.5	(odd, more than 10)	5
	p.21	(place value)	8
	p.27	(multiples of 2, 3)	8
	p.32	(odd, multiples of 5, >100)	8
Computation	p.12	(addition)	5
	p.17	(measuring paths)	4
Geometry & Measurement	p.9	(area)	5
	p.17	(measuring paths)	8
Story Problems	p.11		5
	p.30		6

W8



W14

Festival of Problems #2
(13-5874R)

Student Name _____
Date _____

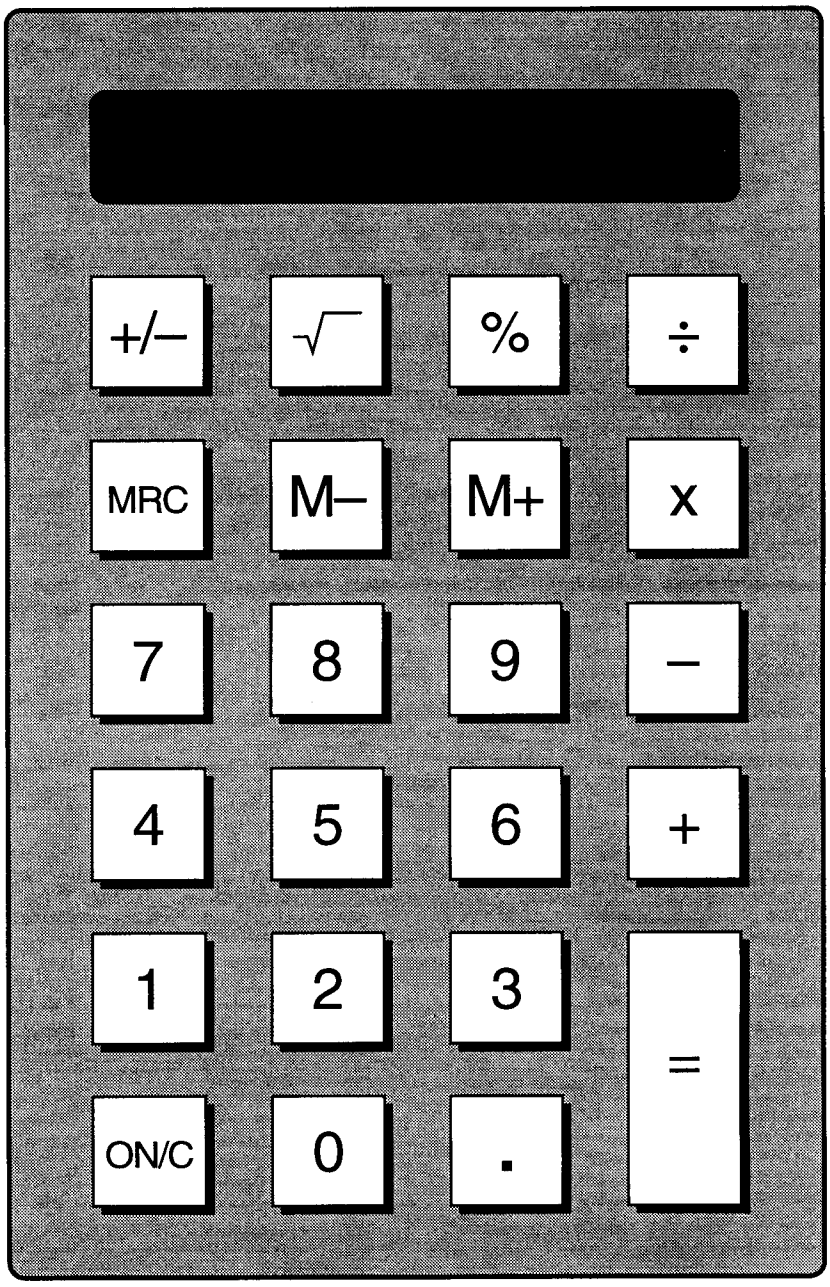
			Responses	
Counting/Sequence	p.2	(number lines 59–114)	20	
	p.18	(number lines, negative numbers)	20	
Arrows	p.3	(+3 with number facts)	24	
	p.8	(+10, +1 arrow road)	9	
	p.11	(2x with number facts)	19	
	p.13	(+10, +1 arrow road)	various	
	p.15	(–2, 2x, +10, less than)	14	
	p.21	(2x, +3)	8	
	p.27	(3x with number facts)	19	
	p.29	(–3, –5)	7	
	p.31	(–6, +8)	7	
Minicomputers	p.4	(7–99)	12	
	p.20	($\widehat{9}$–4,108)	10	
Strings	p.5	(multiples of 3)	10	
	p.12	(even numbers, multiples of 5)	5	
	p.17	(A-blocks)	4	
	p.32	(multiples of 3, 4, and 5)	10	
Money	p.7	(1¢, 5¢, 10¢, 25¢)	6	
	p.26	(story problems)	6	
Computation	p.9	(addition with negative numbers)	7	
	p.10	(number names for 37)	6	
	p.19	(subtraction)	9	
	p.28	(missing addends)	4	
	p.30	(increasing a recipe)	12	
Geometry & Measurement	p.6	(area)	2	
	p.14	(½ of a shape with number facts)	9	
	p.16	(measuring paths)	3	
	p.22	(⅓ of a shape with number facts)	4	
	p.24	(measuring paths)	3	
Detective Story	p.23	(who is Pat?)	10	
	p.25	(who is Pam?)	8	

W17

20?-100?
(13-5965R)

Student Name _____
Date _____

			Responses
Arrows	p.2	(+2)	14
	p.4	(+3)	10
	p.7	(+10, +1)	8
	p.9	(2x)	9
	p.17	(2x, +$\widehat{3}$)	7
	p.19	(+15)	8
	p.21	(+5, –3)	8
	p.23	(½x)	10
	p.25	(2x, –10)	11
	p.26	(3x, +1 road to build)	various
	p.28	(more than)	3
	p.29	(⅓x)	6
	p.32	(2x, –8)	9
Minicomputers	p.5		10
	p.12		10
	p.15		3
	p.20		10
	p.24		6
	p.30		2
Strings	p.8	(multiples of 2)	1
	p.11	(multiples of 4, 5, >20)	1
	p.16	(multiples of 2, 5, 10)	1
	p.27	(multiples of 4)	1
	p.31	(multiples of 3, 4, 5)	1
Money	p.3	(1¢, 5¢, 10¢, 25¢)	6
	p.18	(1¢, 5¢, 10¢, 25¢)	4
Geometry & Measurement	p.6	(measuring paths)	3
	p.10	(area)	4
	p.14	(area)	1
	p.22	(drawing a path)	1


+/–
√
%
÷
MRC
M–
M+
x
7
8
9
–
4
5
6
+
1
2
3
=
ON/C
0
.