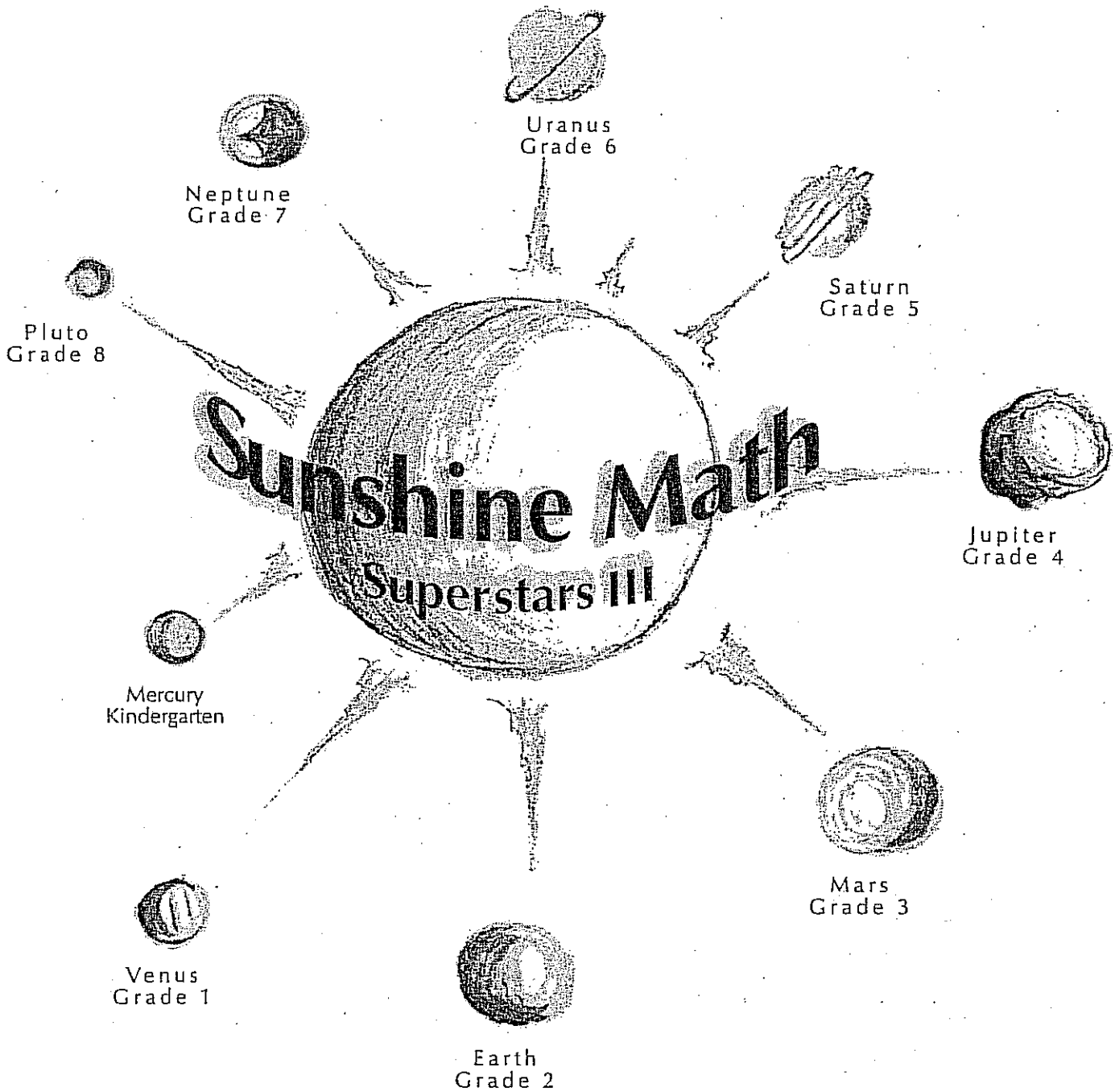

Saturn
Grade 5

Acknowledgments

This project was conceived of and coordinated by the Florida Department of Education. In addition, it was supported financially through a grant to the School Board of Polk County. The rich history of these materials and the predecessor programs *Superstars* and *Superstars II*, goes back to the early 1980's. Dr. Andy Reeves initiated the program at the Department of Education, and many Florida teachers have been involved in developing and using these materials over the years.

The following Florida educators were primarily responsible for developing, field testing, and publishing *Sunshine Math*:

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Jean Bartlett	Cheryl Gentry	Debbie Perry
Ricardo Bellon	Patricia Higginson	Jonathan Perry
Sandy Berger	Sherri Houp	Andy Reeves
Roy Bolduc	Sue Hunsinger	Mary Russick
Rosemarie Bolinder	Earlene Knight	Cathy Starling
Jacqueline Brown	Audrey Lanier	Patsy Shearer
Janie Cates	Carla Lowery	Lisa Tait
Marie Crittenden	Lynda Luckie	Mary Jane Tappen
Lawana Croskey	Colleen Malito	Linda Walker
Debbie Davis	Claudia Mittner	Jane Weese
Linda Ferriera	Carol Newman	Ken West
Mary Fletcher	Jill Nielson	Janet Williams
Carole Fordham	Roger O'Brien	Karol Yeats

Revisions were made to *Sunshine Math* by Sandy Berger, Frankie Mack and Linda Fisher with input from Andy Reeves and from volunteers and district staff in Broward, Duval, and Volusia school districts.

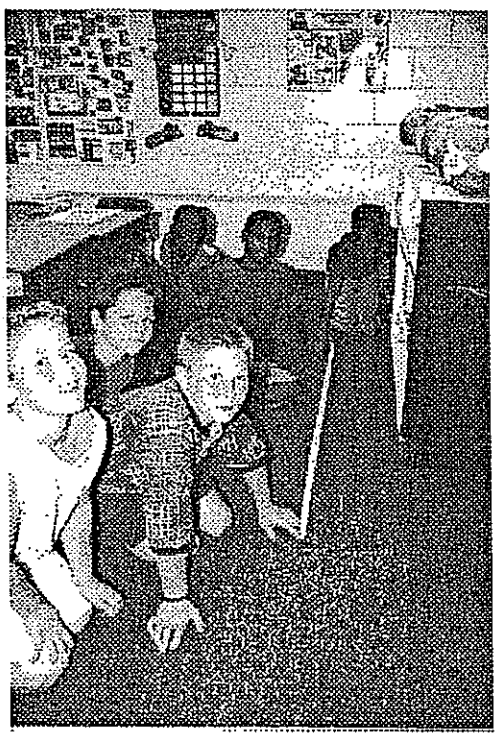
Additional copies of *Sunshine Math* may be purchased at cost from the Panhandle Area Educational Consortium (PAEC), 753 West Boulevard, Chipley, Florida 32428, or by contacting the PAEC Distribution Center:

PHONE: (850) 638-6131,
SUNCOM: 769-6131,
TOLL-FREE: (877) 873-7232
FAX (850) 638-6336

Preface

Sunshine Math and its predecessor programs, *Superstars* and *Superstars II,* dwell on the positive aspects of students, parents, teachers, and administrators working together. This program assumes that children, even young children, are capable of and interested in learning; that teachers want to help them learn to think for themselves; that administrators see their jobs as clearing the path so that quality education is delivered effectively in their schools; and that parents care about their child's learning and are willing to work with the school system toward that goal. Each of these four groups has a vital role to play in implementing *Sunshine Math*..

The program's initiators believed that elementary students are capable of much more than we normally ask of them, and the subsequent success of *Superstars* indicates that many children are on the path to becoming independent learners. A number of children in *any* classroom are bright, energetic, and willing to accept extra challenges.



The basic purpose of the *Superstars* program is to provide the extra challenge that self-motivated students need in mathematics, and to do so in a structured, long-term program that does not impinge on the normal classroom routine or the time of the teacher. The system is not meant to replace any aspect of the school curriculum -- it is offered as a peripheral opportunity to students who identify with challenges and who want to be rewarded for their extra effort. Participation in the program is always optional -- only those students who voluntarily choose to participate will, in the long run, benefit from this program. Any student, regardless of prior academic performance, should be encouraged to participate as long their interest is maintained.

The predecessor programs for *Sunshine Math* - the Florida Department of Education's *Superstars II* and *Superstars*-- have demonstrated that this concept can be extremely successful. What is required are several dedicated adults who devote a few hours each week to operate the system effectively in the school; an administrator who provides highly visible support; teachers who welcome a supplementary experience for their students to engage in higher-order thinking; and a typical classroom of students. If all of those ingredients are present, *Sunshine Math* will become an integral part of the school fabric.

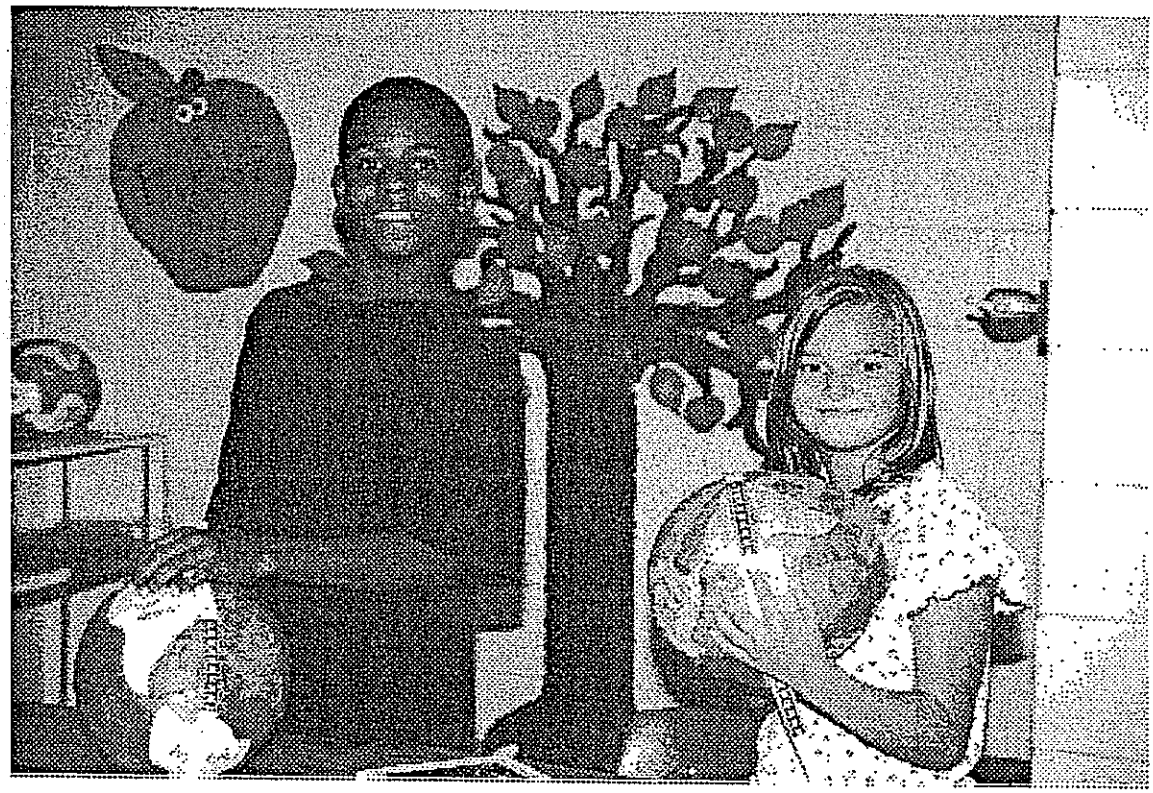
ORGANIZATION OF THESE MATERIALS

Section I **Description of the *Sunshine Math* Program**

1. General Information
2. Information/ checklist for principals
3. Information/checklist for assisting adults
4. Information for teachers
5. Letter to participating students and their parents

Section II **Student worksheets for *Sunshine Math***

Section III **Commentary for student worksheets for *Sunshine Math***



Sunshine Math General Information

Sunshine Math is a K-8 program designed as an enrichment opportunity for self-directed learners in mathematics. The levels of the program are named after the planets of our solar system:

Kindergarten	Mercury	Fifth Grade	Saturn
First Grade	Venus	Sixth Grade	Uranus
Second Grade	Earth	Seventh Grade	Neptune
Third Grade	Mars	Eighth Grade	Pluto
Fourth Grade	Jupiter		

Students of all ability levels choose on their own to participate in *Sunshine Math*. The visual reinforcement of seeing their names displayed in a prominent place in the school, with a string of stars indicating their success, is the reward a student receives for the extra work. In many cases, the school decides to enhance the basic reward system by awarding certificates or other forms of recognition for achieving certain levels of success in *Sunshine Math*.

Sunshine Math can function in a school in a number of different ways. The "tried and true" way is for assisting adults (volunteers, aides, etc.) to manage the program for the entire school, with support provided by school administrators and classroom teachers. This system has been modified at the school level, with varying degrees of success, over the years. The basic model for running *Sunshine Math* is discussed below, with variations described on the next page.

The Basic Model

The basic model for *Sunshine Math* is for a school to establish a weekly cycle early in the fall, according to these guidelines:

> On Monday of each week, student worksheets are distributed by the assisting adults to those in the program. Students have until Friday to complete the problems, working entirely on their own. On Friday, the classroom teacher hosts a brief problem-solving session for the students in the program. The more difficult problems on the worksheet for that week are discussed, with students describing their thinking about how to approach and solve the problems. They do not give their answers for the problems, only their strategies.
>
> Students get double-credit for problems they complete prior to the problem-solving session, and regular credit for those they complete successfully over the weekend. On Monday, all papers are handed in, checked by the assisting adult, and stars are posted for problems successfully worked. This completes the cycle for the preceding week, allows for the new worksheets to be passed out, and the cycle begins again.

Sunshine Math is not for every child -- it's only for those who are self-motivated and who are not easily frustrated by challenging situations. This does not diminish the value of the program, but rather makes us realize that there are children of all ability and socio-economic levels who are self-directed learners and who need challenges beyond those of the regular school day. These children will shine in *Sunshine Math*.

Variations of the Basic Model

The first variation that has been used successfully retains the weekly cycle and assisting adult role as in the basic model. However, the teacher involves the entire class in the problem-solving discussions. For example, the teacher might pick the four hardest problems on the worksheet for that week, and do a "parallel problem" with the entire class to open the mathematics class on Tuesday through Friday. Using this variation, all students are exposed to the problem-solving strategies, but only those who are in *Sunshine Math* exhibit that they have learned the material by completing the worksheet over the weekend.

A second variation is for the assisting adults to run the entire program, including the problem-solving session for students. This method has been used in situations in which some teachers in a school lacked commitment to the program, and thus it was being implemented inconsistently. In such cases, the assisting adults must have a progressive view of what constitutes problem solving in elementary mathematics. They must also be given extra assistance from the principal to ensure students are released from class and that the process works smoothly in general.

Yet another variation is for a parent to run *Sunshine Math* at home, for their own child. The basic rules are the same -- a child gets the worksheet once a week and time to work the problems alone. The parent has a pre-established night to listen to the way the child thought about each problem, interjecting her or his own methods only when the child seems stuck. The reward system is basically the same -- stars on a chart -- but is usually enhanced by doing something special for the child, such as a trip to the movies or to the skating rink, when the child reaches certain levels of success. If this method is adopted, the parent must be sure not to try to "teach the child." *Sunshine Math* is a program designed to stimulate discussion of problem-solving strategies; it is not a program designed for adults to "teach children how to think."

Other variations abound. The basic model on the previous page is the approach that reaches more children in a consistent fashion than any of the other methods. However, individual schools, teachers, or parents are encouraged to get some version started, even if it's not one of the above. Some sunshine is better than none at all!

Sunshine Math: Information for Principals

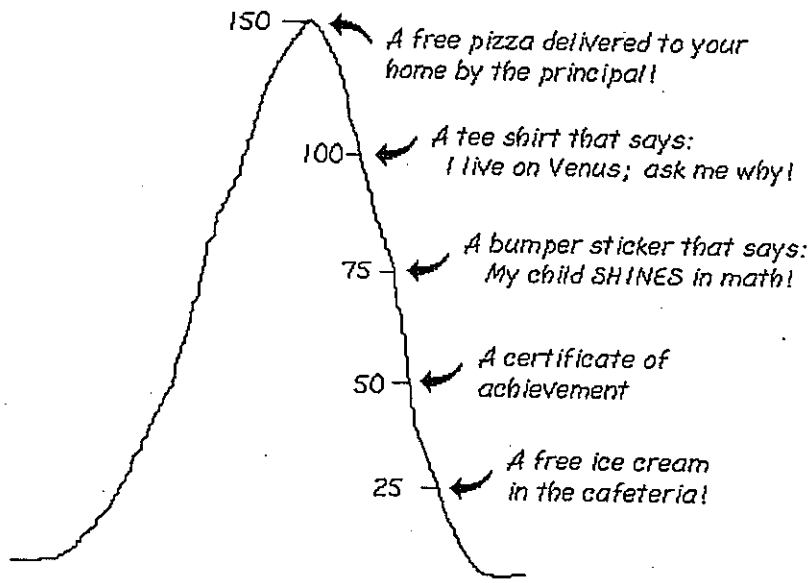
Sunshine Math is a K-8 enrichment package for mathematics, designed to be managed by volunteer assisting adults with coordinated support from the classroom teacher and school administrators. The purpose of the program is to give self-motivated students of all ability levels a chance to extend themselves beyond the normal mathematics curriculum. The complete set of materials comes in nine packages, one for each K-8 grade. The grade levels are named for the planets in the solar system, in order starting from the sun: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto.

Your support is vital if this program is to succeed. As the school administrator, you need to stay in close touch with *Sunshine Math*. A "checklist for success" follows:

- ❑ Become familiar with the philosophy and component parts of the program.
- ❑ Introduce *Sunshine Math* to the faculty early in the school year. Ensure that each teacher understands the philosophy of the program and has a copy of the student worksheets and commentary for that grade level.
- ❑ Speak to parents at your school's first "open house" of the year, explaining the purpose of *Sunshine Math* and the long-term value of children working independently on the worksheets.
- ❑ Recruit several assisting adults (PTA members, aides, senior citizens, business partners, churches, and so on) who are enthusiastic, dependable people to manage the program. Early in the year, meet with these assisting adults to plan such details as:
    - ✔ A prominent place and format for the STAR CHART.
    - ✔ A designated time each Monday and Friday for the assisting adult to be in the school to receive and distribute papers from students, and post stars.
    - ✔ A system for the activity sheets to be duplicated each week.
    - ✔ A plan for extra incentives for accumulating stars. ("World records" to be kept from year-to-year; a celebration day planned for the end of school; students earning prizes for attaining certain levels of success – see the reverse side of this page for examples:)
    - ✔ A schedule for when the program will begin, and whether or not there should be a "start over" point at some time in the school year. Review a school calendar, and use only weeks that have at least four school days in them. If there isn't time in the school year to cover all the activity sheets under these conditions, decide which sheets to eliminate or when to "double up."
    - ✔ If possible provide volunteers with a *Sunshine Math* cap, name tag, tee-shirt, or other identifying feature.
- ❑ Monitor the program every two weeks to clear up any unforeseen problems. Administrators need to be highly visible for *Sunshine Math* to succeed.

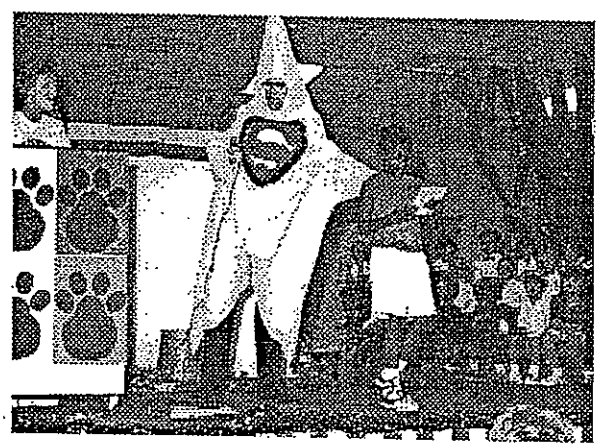
Sunshine Math is an optional program for students. It should be available to any student who wants to participate, regardless of prior success in mathematics. A large number of students will usually begin the program, but a majority of them will lose interest. However, a significant number of students will continue their interest over the life of the program. This is normal and simply means that *Sunshine Math* is successfully addressing the needs of the self-directed learner.

Visual reminders help children see that mathematics is challenging and rewarding. Some ideas are presented below, merely to start your creative juices flowing:



Climb the Mountain this Year!!!

Join the Sunshine Math Club



Tom Walker, Principal at Bashaw Elementary School in Bradenton, passes out awards for achievement levels in Superstars.

Sunshine Math: Information for Assisting Adults

Sunshine Math is designed to give assisting adults a well-defined role to play in the school's mathematics program. The success of *Sunshine Math* depends on a team effort among teachers, administrators, parents, and you. Reliability and punctuality are important -- students will rapidly come to depend upon you to be there as scheduled, to check their papers and post their stars, and to listen to alternate ways in which they may have interpreted a problem to arrive at a unique answer. If possible, wear an outfit that fits with the *Sunshine Math* logo; students will quickly begin to identify you as an important person in their school.

Participating students have from Monday until Friday to work the problems entirely on their own -- the only help they can receive during that time is for someone to read the problems to them. On Friday, the teacher hosts a problem-solving session in the classroom, having students describe their approaches to the more difficult problems. Students who have already worked the problems discussed, prior to the problem-solving session, can earn double stars -- you can identify these by looking for the teacher's initials beside certain problems. The students will have the weekend to complete any problems they want to -- for successfully completing these problems, they earn the indicated number of stars.

Be creative when designing a star chart. The basic method of posting stars individually is a good way to begin, but eventually you will want a color-coded system, or perhaps posting only one star each week, with a number in its center. Personalize the chart and the entire *Sunshine Math* center with pictures of students, "smiling faces," and so on. Occasionally bring in a reward for each child -- perhaps a cookie or a hand stamp in the shape of a star -- just for turning in their worksheet. Be creative and enjoy your role -- you are helping enthusiastic students develop higher-level thinking skills!

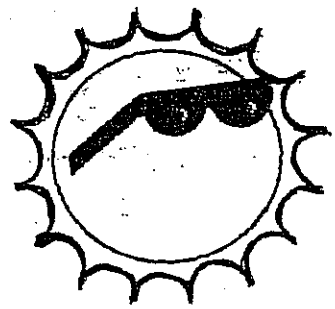
Checklist for assisting adults:

- ❑ Plan with the principal the following:
  - ✔ A prominent place and format for the STAR CHART.
  - ✔ The time and place for you to take up and check papers, and distribute new worksheets.
  - ✔ The system for duplicating worksheets each week, ensuring legible copies.
  - ✔ Any extra incentives ("world records," stickers, coupons, pencils, tee shirts, etc.) that will be part of the system for rewarding levels of achievement in *Sunshine Math*.
- ❑ Make the *Sunshine Math* center a happy place. Use bright colors, smiles, and cheerful words. Show confidence, friendliness, and encouragement to students.
- ❑ Collect the letters which are sent home prior to the first worksheet and signed by each student and parent . If in the future you have evidence that the work turned in does not represent the thinking of the student, discuss the situation with the classroom teacher. These situations are best handled individually in a firm, consistent manner.
- ❑ Check the worksheets from the previous week consistently. If you give partial credit for a problem with several parts, do so in a fair way that can be explained to students. Do not award partial credit for problems with only one answer.
- ❑ Have answer sheets available and encourage students to look at the answers when they hand in their worksheets. Allow them to explain their thinking if they arrived at a different answer. Award them full credit if they show a unique interpretation of the problem, and logical reasoning in obtaining an answer.
- ❑ Leave extra worksheets with the classroom teacher for participating students who were absent on Monday. Accept a late-arriving worksheet only if the student was absent on Monday. If a students' name is missing, or on the wrong place on a worksheet, check the paper but award the stars to "no name" on the STAR CHART. Adhering strictly to these rules will rapidly teach responsibility to the students, and keep your work load manageable.
- ❑ Keep all returned worksheets. As the same worksheets are used year-after-year, and many participating students have siblings who will later be in *Sunshine Math*, it is important that the students not be allowed to keep their worksheets.
- ❑ On weeks when *Sunshine Math* will not be available, post a sign such as "No star problems this week, but please come back after the vacation for more!"

Sunshine Math: Information for Teachers

Sunshine Math is a program designed to complement your regular classroom mathematics curriculum. It offers a peripheral opportunity for students to practice mathematics skills appropriate for their grade level and, at the same time, to participate in problem-solving experiences. It offers a challenge to those students who are self-directed learners by giving them something worthwhile to do outside of class.

Your involvement is strictly as a teacher. *Sunshine Math* will remain special to students if it's managed by someone outside the classroom, and if the teacher is viewed as a facilitator in the system, rather than as the authority figure. Your primary role is to monitor the system in your own classroom and host a brief problem solving session for *Sunshine Math* students on Friday of each week. You will also need to release the participating students from your class at a set time on Monday to turn in their worksheet and obtain a new one. You might make yourself a special pin like that shown to the right, to wear on Monday and Friday to remind students that those days are special.



Each student worksheet has an accompanying commentary page. This sheet provides hints on parallel problems which you might use in the Friday problem-solving session. It is important that students participate actively in this session, and that you solicit from them their unique approaches to the problem discussed. Only after students present their ideas should you provide guidance on the problems, and then only when necessary. Even though there is a comment provided for each problem, you will have to decide which 3 or 4 problems you will cover during this brief session. Concentrate on those whose solution requires a strategy. The problem-solving session should last no more than 15 minutes.

Do not be disappointed if a large number of your students begin *Sunshine Math*, but many drop out after a few weeks. This is normal; problem solving requires a great deal of effort, and only certain students are ready for this challenge. On the other hand, you will also note that certain students *do* choose to stay in *Sunshine Math* week after week, even though they aren't as successful as other students at earning stars. Their participation should be encouraged, as they are certainly learning from the experience. Under no circumstances should *Sunshine Math* be reserved for only the advanced students in your class.

As a purely practical consideration, students are not allowed to discuss the problems with other students or their parents prior to the Friday "cooperative group" problem-solving session. This allows the "think time" necessary for students to develop into independent thinkers; it also prevents students from earning stars for work that is basically someone else's which is the surest way to disrupt the entire *Sunshine Math* program. As the teacher, you must monitor this in your classroom and ensure that students abide by the established rule.

It is important that you understand and support the overall philosophy of *Sunshine Math.* Do not worry if students encounter problems for which they have not been prepared in class—such is the nature of true problem solving. Do not provide remedial instruction to ensure that students master certain types of problems – they will meet these same problems types repeatedly in the program, and likely will learn them on their own and from listening to other students at the problem-solving session. You should enjoy what the student *can* do, and not worry about what they can't do. You should also read over the general information about the program, to see how your role fits into the entire system.

Here are some hints that you might find useful in your support role for Sunshine Math:

- ✓ Allow your students to leave the classroom at the designated time on Monday to turn in their worksheets and pick up a new one.

- ✓ Read each week's worksheet yourself, and feel free to structure classroom activities that parallel those on the *Sunshine Math* worksheet.

- ✓ During the school week, students should be allowed to work on their *Sunshine Math* problems during their spare time, but the only help they can receive is for someone to read the problems to them. Give the students one warning if you observe them discussing the worksheets, and take away their papers for the next violation. If it happens another time, dismiss them from *Sunshine Math* for a month.

- ✓ At the problem-solving session on Friday, remember these points:

  - → Students come to this session with their worksheets, but without pencils.

  - → The session must be brief – 15 minutes at most. Discuss only the 3 or 4 most difficult problems on the worksheet.

  - → Help students summarize their own approaches to the problems, in a non-judgmental fashion. Offer your own approach last, and only when it's different from the student strategies. Do not allow answers to be given to the problems.

  - → End the session by encouraging students to complete the problems over the weekend. Put your initials beside any problem discussed in class which a student has already completed successfully. The assisting adult will award double stars for these.

- ✓ Remember that part of the *Sunshine Math* philosophy is that students learn responsibility by following the rules of the system, if participation is important to them. *Sunshine Math* becomes very important to certain students, so they will adhere to rules about where their names goes on each paper, no credit if they forget their paper on Monday, no talking about the problems prior to the problem-solving session, etc., if *you* enforce the rules.

- ✓ Enjoy *Sunshine Math*. Students will impress you with their ability to think, and their creative ways to solve problems that appear to be above their level.

Here's a song for your students – to the tune of "When you wish upon a star":

When you get your SUPERSTARS....
It won't matter who you are....
Try a few....
See what you can do....and...
Success will come to you!!!

Sandy Parker, Lake Weir Middle School, Ocala, FL

WELCOME TO *SUNSHINE MATH!* We are happy that you want to try some new and different kinds of math problems! As you read the *SUNSHINE* problems, you may find yourself *? PUZZLED?.* Your teacher will be helping you each week with some of the hardest problems. Also, your parents may read the problems to you and offer hints for solving them.

If you would like to begin earnings ***STARS** for solving math problems, sign your name below.

(Your name)_____I am ready to begin the *SUNSHINE MATH* Program. I promise to do my own thinking on each problem.

Dear Parents,

We welcome your child and you to *SUNSHINE MATH,* a program designed to enhance your child's journey through mathematics. By expressing an interest in more challenging problem solving, your child has taken the first step toward becoming an independent learner who is able to address many types of problems.

Your child will receive a worksheet each Monday which will be discussed on Friday and collected the following Monday. Each problem is ranked according to its level of difficulty. The more stars you see beside a problem, the higher the level of difficulty, and the more stars your child can earn for solving it.

Each Friday, your child will attend a "help session" to discuss the most challenging problems of the week. Any problem solved prior to the help session will be given double stars, or double credit. After the session, your child may rework problems before the sheets are collected on Monday.

Your role in *SUNSHINE MATH* is to encourage and facilitate problem solving. During the week, allow time for your child to think about each problem. You may need to read the problem to your child, explaining any new words encountered. Feel free to suggest a strategy for solving the problem, offer "counters" or manipulatives, or listen as your child shares her or his thinking, but please **DO NOT GIVE THE ANSWERS.** In order for this program to be effective, the thinking must be done by the students.

It is normal for a child NOT to be able to complete every problem on a worksheet. The process of reading, understanding and approaching the problems is a valuable step in solving many types of problems. Remind your child that she or he is not expected to know the answers to every problem.

Thank you for allowing your child the chance to embark on this mathematical adventure. Your signature gives permission for your child to begin.

_____

(parent's signature)


WORKSHEETS

SUNSHINE MATH - 5
Saturn, I

Name: _____

(This shows my own thinking.)

★★★★ 1. A worm is at the bottom of a 10 foot hill. He crawls up the hill $4\frac{1}{2}$ feet a day. At night when he rest he slides down $2\frac{1}{2}$ feet. How long does it take the worm to crawl up the hill? (Hint: Draw a picture.)

Answer: _____ days

★★★ 2. Jennifer was shopping, and using a calculator to find the price of a can of soda. She got the number shown on the display, but didn't know exactly how much money that was. How much money would the can of soda cost? Circle the best answer below.

(a) $6

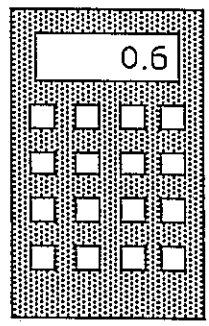
(b) $.06

(c) $0.60

(d) 60¢

(e) 0.60¢

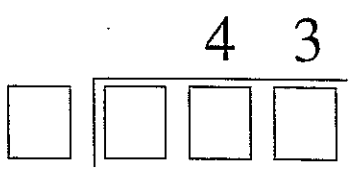
(f) both (c) and (d) above



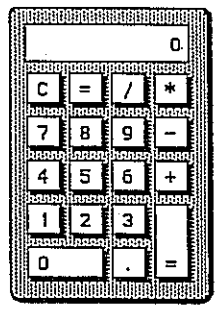
★ 3. If the 9th day of a month is on Tuesday, on what day is the 25th?

Answer: _____

★★★ 4. Put one digit from {1, 0, 3, 7} in each box to get the correct long division problem.



★ 5. Use this calculator in geometry. Circle two sides you could use to draw a set of *parallel* lines.



★★ 6. Use a ruler and measure the pencil below to the nearest millimeter.

Answer: _____mm

★★★★ 7. Mrs. Jones had some white paint and some green paint, and a bunch of wooden cubes. Her class decided to paint the cubes by making each face either solid white or green. Juan painted his cube with all 6 faces white--Julie painted her cube solid green. Hector painted 4 faces white and 2 faces green. How many cubes could be painted in the fashion, so that each cube is different from the others? Two cubes are alike if one can be turned so that it exactly matches, color for color on each side, the other cube.

Answer: _____ cubes can be painted so they are different

★ 8. Letia bought a milk shake at the ice cream shop, and gave the clerk a $10 bill. She got $9.61 in change. Is this reasonable? Why or why not?

Answer: _____

★★★ 9. The sum of my two digits is 13. I am not divisible by 2. List all possible numbers I could be.

Answer: _____

SUNSHINE MATH - 5
Saturn, II

Name: _____

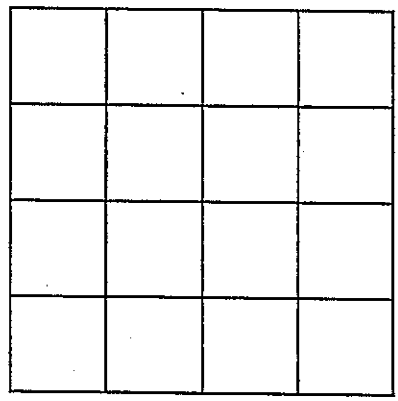
(This shows my own thinking.)

★★★ 1. Use each of these digits one time in the number sentence below: 2, 4, 6, and 8. Fill in the blanks to produce the answer "14." Remember that you compute inside parentheses first.

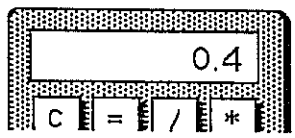
(___ ÷ ___) + (___ x ___) = 14

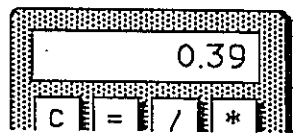
★★ 2. How many squares can be found in the figure to the right?

Answer: _____ squares



★ 3. Tamisha did a problem two different ways on her calculator. She got two different answers. Which of the two answers below represents the largest number? Circle it.





★★ 4. The girl scouts were going on a field trip to the zoo. There are 25 people going. They rented vans and each van has only 7 seat belts. How many vans do they need?

Answer: _____ vans

★ 5. Write the standard numeral: 9000 + 700 + 8 + 0.6 = _____

★★★★ 6. What do you know about metrics? Circle the answers below that would make sense.

a. The weight of a pineapple:	1 kg	1 g	1 mg
b. The capacity of a can of soda:	35 mL	3.5 mL	350 mL
c. The temperature on a summer day:	30° C	3° C	- 3° C
d. The distance from New York to Miami:	2200 cm	2200 km	2200 mm

★★★ 7. A class of 25 students has 10 boys. Three boys have braces and 4 girls have braces.

a. What is the ratio of boys with braces to boys in class? _____

b. What is the ratio of girls with braces to girls in class? _____

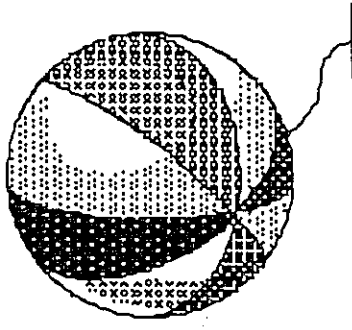
c. Which of the two above ratios is larger? _____

★★★★ 8. The price and the sales tax are given. Compute the total cost. Tell how much change you would receive from $5.00.

Answer: _____ Total Cost

Answer: _____ Change

Beach Ball



SUNSHINE MATH - 5
Saturn, III

Name: _____

(This shows my own thinking.)

★★ 1. Toni works in the school store. She sold 36 notebooks and 42 book covers. The notebooks cost $2.38 each, and the book covers cost $1.75 each. What is the total cost of Toni's sales?

Answer: _____

★ 2. A lot of students like to ride horses. Use the chart below to compare the primary grade riders (grades 1-3) with the intermediate grade riders. What is the difference in the number of riders between these two groups?

Horseback Riders

1st Grade	Ω Ω Ω Ω
2nd Grade	Ω Ω Ω Ω Ω
3rd Grade	Ω Ω
4th Grade	Ω
5th Grade	Ω Ω Ω Ω Ω Ω Ω Ω

Key: Each Ω = 3 students

Answer: _____

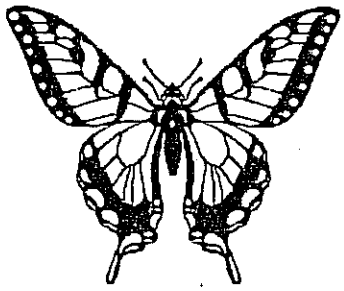
★★ 3. You have $100. You spend $\frac{1}{4}$ of your money to buy a new pair of jeans. You want to save $\frac{1}{5}$ of what you have left. How much will you save?

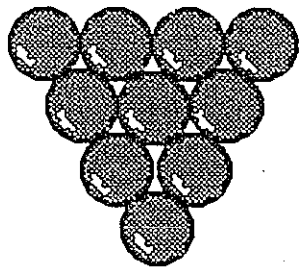
Answer: _____

★★★ 4. Use these digits only once: 1, 2, 4, and 8. Write a number sentence and use any of the operations (+, –, x, ÷) as many times as you like. You must get 0 as an answer. Use parentheses if you like.

Answer: My number sentence is: _____

★★ 5. Draw all the *lines of symmetry* of the figures below.



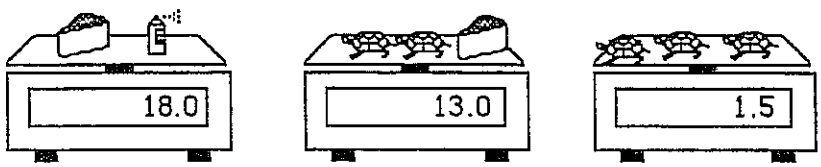


★ 6. Below is a *line of symmetry*. Draw a figure around it for which the line is a *line of symmetry*.

★★★ 7. Students arrived for school in groups. Bill was the first to arrive--consider him the "first group". Each group that arrived after Bill had two more people than the group that arrived before it. How many people were in school after 20 groups arrived?

Answer: _____

★ 8. How much does the can of paint weigh, by itself? Answer: ____

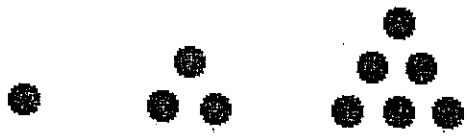


SUNSHINE MATH - 5
Saturn, IV

Name: _____

(This shows my own thinking.)

★★ 1. One, three, and six are triangular numbers. List all the other triangular numbers up to 36.

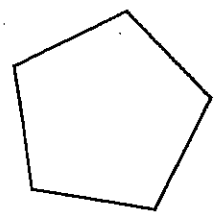


Answer: _____

★ 2. Jennifer earns $5.25 an hour. Starting Monday she will get a raise to $5.85 an hour. She works 40 hours each week. How much more will she make next week than she made last week?

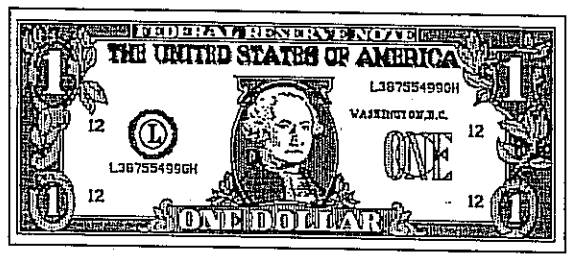
Answer: _____

★★ 3. A diagonal joins two vertices of a polygon. Draw all the diagonals in the polygon to the right.



★★ 4. Marti plans to save 25% of the money she makes over the summer washing cars.

a. Shade in about 25% of the figure to the right to show how much she will save from every dollar she earns.



b. How much will Marti save for each car she washes for $5?

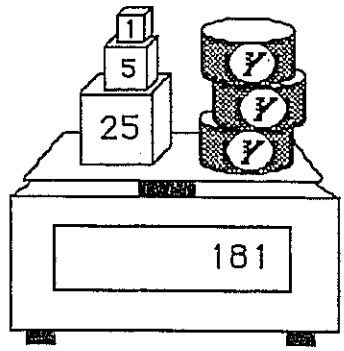
Answer: _____

★★ 5. The Phillips family wants to fence their backyard. They know the yard has a perimeter of 24 meters, and an area of 32 square meters. What is the yard's length and width?

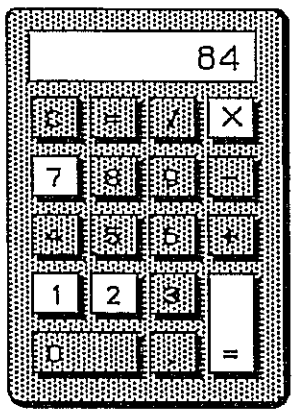
Answers: The length is _____meters, and the width is _____ meters.

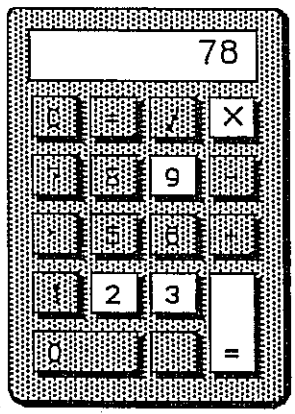
★★★ 6. Y stands for the weight of 1 can of tuna fish on the scale. Find Y.

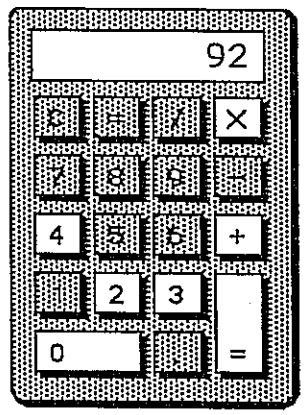
Answer: $Y =$ _____



★★★ 7. Write the problems and answers below each calculator:

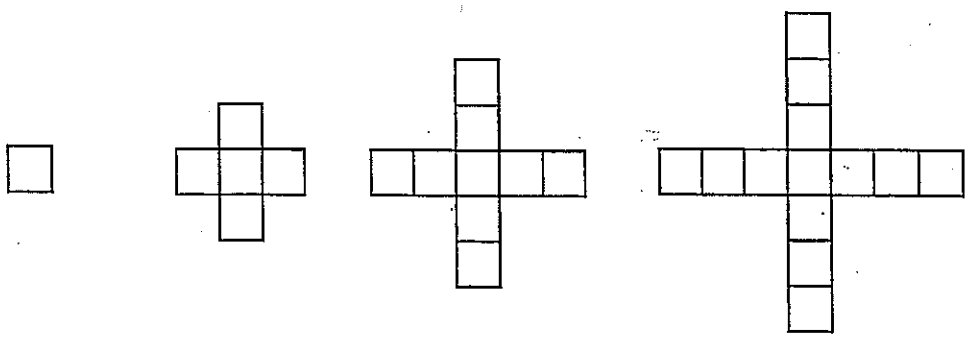






_____ = _____ _____ = _____ _____ = _____

★★ 8. Look at the pattern below. How many squares would be in the 10th shape in the pattern?



Answer: _____ squares

SUNSHINE MATH - 5
Saturn, V

Name: _____

(This shows my own thinking.)

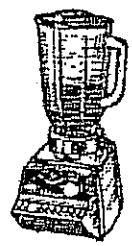
★★ 1. Big Al has a set of non-metric wrenches that have these numbers on the end:

$\frac{7}{16}$ $\frac{1}{4}$ $\frac{9}{16}$ $\frac{3}{8}$ $\frac{5}{16}$ $\frac{1}{2}$

Which of his wrenches fits the largest nut? Which fits the smallest nut?

Answer:s _____ fits the largest _____ fits the smallest

★★★ 2. Jennifer bought a blender for her mother. The blender was on sale for $\frac{1}{3}$ off the marked price. The regular price of the blender was $18.00. How much will she pay for the blender, including sales tax of 6% ?



Answer: _____

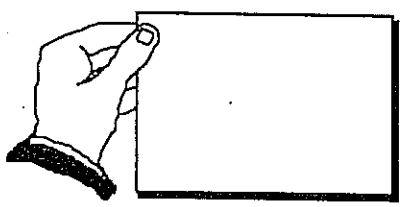
★ 3. Melissa and Sarah arranged the music hall for a concert. They made 42 rows with 35 chairs in each row, and 12 rows with 25 chairs per row. How many chairs did they use in all?

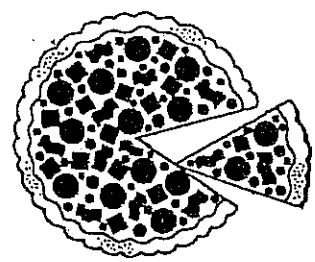
Answer: _____ chairs

★★ 4. The "square corners" on a sheet of writing paper are 90 degree angles. You can use these corners to estimate the measure of other angles.

About what is the angle of the piece of pizza being removed in the picture?

Answer: ____ degrees





★★ 5. In the month of April 9.45 inches of rain fell in Tallahassee. During the month of May 9.6 inches of rainfall fell. Which month had the most rainfall, and what was the total for the two months?

Answer: _____ had the most; the total was _____ inches

★ 6. Complete the addition. Convert your answer to largest units. (i.e., change inches into feet and feet into yards, if possible)

2 yd. 2 ft. 3 in.
+ 1 yd. 2 ft. 11 in.

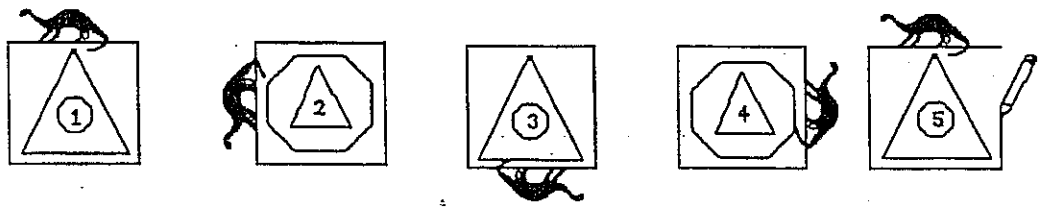
★★★ 7. Eli's Dad made him a birthday cake, but forgot to buy candles. He could only find a few. But Eli was smart in math, so his Dad said "The ratio of candles to years is 3 to 5." That gave him the right number.

How old was Eli? _____

★★★ 8. Kenya, Matt, Tia, and Justin live on the same street. Their houses are gray, green, blue, and white, but not necessarily in that order. Justin lives next door to the grey house. Matt and Justin live across the street from the green house. Tia's house is blue. Circle the one who lives in the white house.

a. Kenya b. Matt c. Tia d. Justin

★★★ 9. Answer the questions after studying this pattern. Notice when the pattern starts repeating.



a. Circle the figure above that would be the same as figure 15 in the pattern.

b. List the numbers of 5 figures not shown that would be just like number 1: _____

c. What is the number of the figure above that is just like the 100th figure in line? ____

SUNSHINE MATH - 5
Saturn, VI

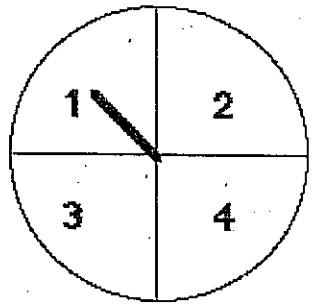
Name: _____

(This shows my own thinking.)

★★ 1. The Adams family uses a spinner each night to see who does the dishes. Carla is assigned number 4.

a. What is Carla's chance of having to do the dishes on any given night? _____

b. What is Carla's chance that she won't have to do the dishes on any given night? _____



★★★★ 2. Bonita has 6 coins. All of them are pennies or dimes. What are the possible amounts of money she might have?

Answer: She might have ___¢, ___¢, ___¢, ___¢, ___¢, ___¢, or ___¢

★★ 3. Compute this answer. $8 \times (7.5 + 2\frac{1}{2})$

Answer: _____

★★ 4. Solve this problem if you have enough information. If there is not enough information tell what you need to know in the space below.

Kimberly orders a sweatshirt. The shirt costs $25.99 plus the cost for mailing. Kimberly paid with a $100 bill. How much change did she get back?

Answer: _____

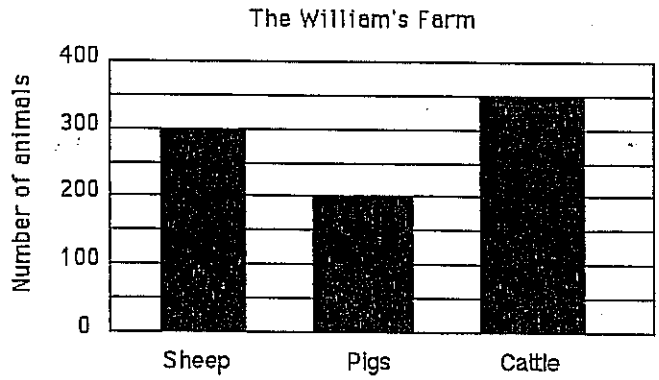
★ 5. Use a ruler to draw a segment 52mm long, in the space below.

★★★ 6. Use the following graph to answer these questions.

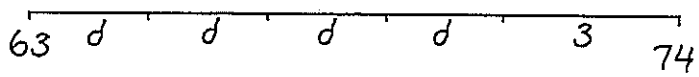
a. What is the total number of animals on the Williams' farm? _____

b. What is the difference in the number of cattle and the number of pigs? _____

c. How many more pigs do they need to equal the total number of cattle and sheep? _____



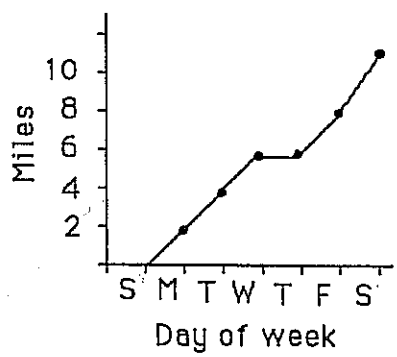
★★★ 7. Maria's bike odometer read 63 miles. She rode her bike to school and back 4 days last week. On Saturday she rode to the park and back, a total distance of 3 miles. At the end of those five trips, her odometer showed 74 miles. Find the distance *d* from her house to school and back. You can find *d* by using your number sense and the diagram below.



Answer: *d* =_____ miles

★★ 8. Maria made a graph of the distance she travelled last week on her bike between school and home. Which day of the week did she not ride her bike to school?

Answer: _____



★★ 9. There are 34 classes in a school and each class could have between 23 and 30 children.

a) What is the school's highest possible student population? _____

b) What is the school's lowest possible student population? _____

SUNSHINE MATH - 5
Saturn, VII

Name: _____

(This shows my own thinking.)

★★ 1. What is the sum of these mixed numbers? $5\frac{2}{3}$, $3\frac{3}{4}$, $13\frac{1}{6}$, $8\frac{1}{2}$

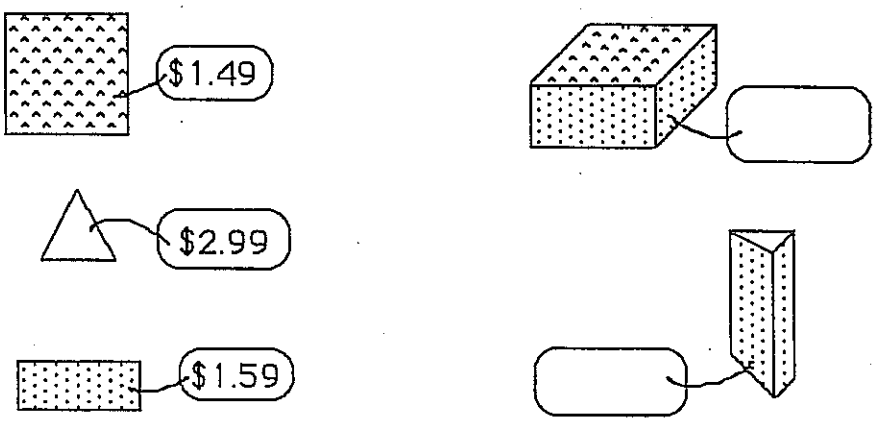
Answer: _____

★★★ 2. Artesia found a sale on skates. She got $\frac{1}{5}$ off the regular price of $34.50. What was the sale price of her skates?

Sale on skates!

Answer: $_____

★★★ 3. John needed two more shapes to complete his project. How much will each shape cost? Compute the cost of each shape using the key -- write the cost on each tag.



★★★★ 4. Put >, <, or = between each pair of numbers.

a. 34.63 _____ $34\frac{1}{2}$

b. $3\frac{2}{5}$ _____ $1\frac{12}{5}$

c. 12.443 _____ 1.2443

d. 0.09 _____ 0.9

★★ 5. Mike and Sam are running a 26 mile marathon. They started out at 8:15 a.m.. They both crossed the finish line at 1:26 p.m.. How long did it take them to finish the race?

Answer: _____ hours and _____ minutes

★★★ 6. a. How many $1 bills are in $1,000,000? _____

b. How many $100 bills are in $1,000,000? _____

c. How many $1,000 bills are in $1,000,000? _____

★★★★ 7. Find the numbers that each letter stands for in the problem below.

$$\begin{array}{r} EFGH \\ \times \quad 4 \\ \hline HGFE \end{array}$$

E =_____

F =_____

G =_____

H =_____

★ 8. Jim was putting carpet in his son's tree house. He needed to find the area of the floor. But he was having trouble with the multiplication. The measurements were 4.2 meters by 6.3 meters. Do the multiplication to help him find the area.

Answer: _____meters^2

★★ 9. Rewrite this riddle so it's easily understood.

The middle 3/5 of SHOWS.	The middle 1/5 of TRAPS.
The first 1/3 of DOODLE.	The first 6/6 of TURKEY.
The first 3/5 of YOURS.	The middle 1/2 of PINS.
The first 1/2 of KEEPSAKE.	The first 8/11 of SUSPENSEFUL.

Answer: The riddle is: _____

A good answer to the riddle might be: _____

SUNSHINE MATH - 5
Saturn, VIII

Name: _____

(This shows my own thinking.)

★★★ 1. Write true, sometimes, or false.

a. Perpendicular lines intersect. _____

b. Two sides of a triangle are parallel. _____

c. Two lines that are parallel to the same line are parallel to each other. _____

★★ 2. Solve:

$$9 \div (1 + 2) + 9 \div 3 = ?$$

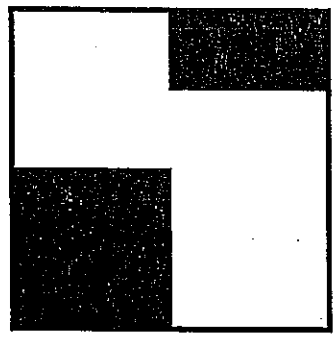
Answer: _____

★ 3. Lisa and Sandy were comparing sticks. Lisa's stick was $\frac{2}{3}$ of a yard long. Sandy's stick was $1\frac{10}{12}$ of a foot long. Who's stick was the longest, and by how much?

Answer: _____ was longer, by _____.

★★★★ 4. What fraction of the large square is shaded?

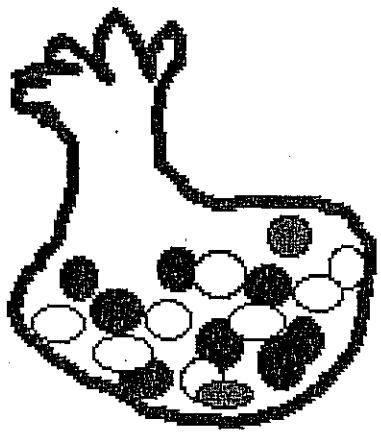
Answer: ____ is shaded



★★ 5. Adrienne left home at 8 a.m.. She arrived in Los Angeles at 1:28 p.m.. Her friend Erica left home at 10 a.m.. She arrived in Los Angeles at 2:45 p.m.. Assume they are in the same time zone the whole trip and both trips take place during the same day. Altogether, how many hours did Adrienne and Erica spend traveling?

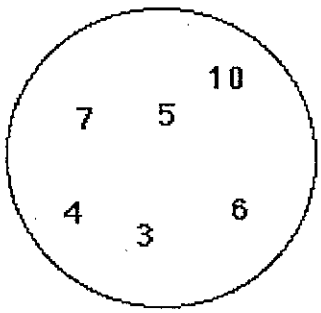
Answer: _____ hours, _____ minutes

★★ 6. Mike had eighteen jellybeans in a bag. 12 of them were green, 1 was blue, 1 was black, 1 was white, 1 was pink, and 2 were orange. If he stuck his hand into the bag without looking, what is the probability of his pulling out an orange jellybean? Write your answer as a fraction.



Answer: _____

★★★★ 7. Write a number sentence. Use every digit in the circle only once. Insert math symbols (+, −, x, ÷) and end with the number three. Use parentheses if necessary.



Answer: _____ = 3

★★ 8. Joe and Christine each bought a six pack of colas. Joe gave $\frac{2}{3}$ of his away to friends, and Christine gave away $\frac{1}{2}$ as many as Joe. How many more colas did Christine have, than Joe?

Answer: She had ____ more.

★ 9. Lo Ann's softball team had 16 players. One day it started raining at practice, and all but 5 players squeezed into the refreshment stand, out of the rain. How many were left to get wet?

Answer: _____ were left outside and got wet.

SUNSHINE MATH - 5
Saturn, IX

Name: _____

(This shows my own thinking.)

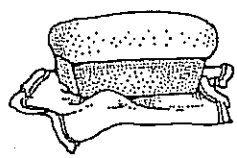
★★ 1. Sandra has eight coins which total $0.87. What coins does she have? (Hint: make a chart or a list.)

Answer : _____

★★ 2. Practice doing some problems like this. You will be given one when you turn in your paper, and you can only write the answer down. You'll have to use mental math.

Answer later: _____

Lonny has $15 to buy some groceries for his mom. Milk costs $2.39, bread costs $1.29, eggs cost $0.79, and mayonnaise costs $2.49. If he buys one of each item, can he expect to get $10 in change? _____ (yes or no)



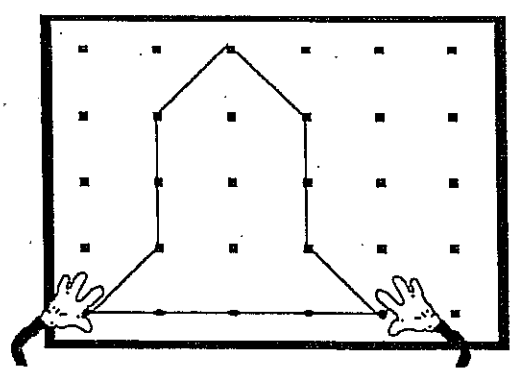
★★ 3. Jack wants to buy an equal number of green, blue and white ornaments for his holiday tree. Green ornaments come in packages of 3; blue ornaments come in packages of 6; the white ones come in packages of 4. What is the least number of packages of each color he must he buy?

Answers: _____ packages of green

_____ packages of blue

_____ packages of white

★★ 4. Mickey made a space ship on his geoboard.

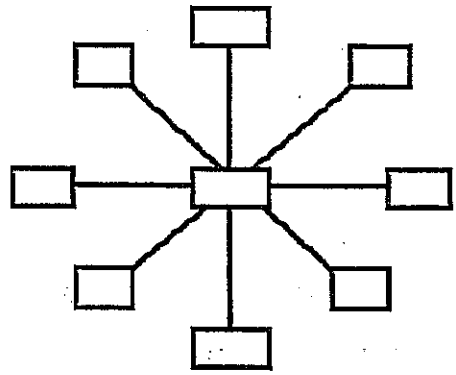


a. Draw any lines of symmetry on the space ship.

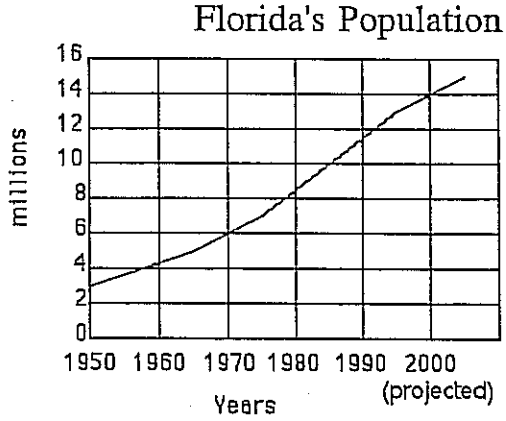
b. Find the area of the space ship by counting whole and partial square units.

Answer: The area is _____ square units

★★★ 5. Use each digit from 1 to 9 to make each line sum to 15. Use each digit only once.



★★★ 6. Use the graph to answer the questions about Florida's growing population.



a. What is the increase in population from 1950 to 2000?_____

b. What was the approximate population in 1980? _____

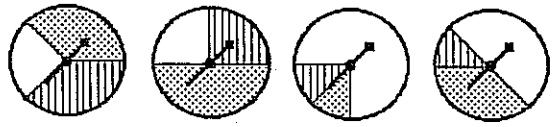
c. At the current rate of increase, what would the population be in 2010? _____

★★★ 7. Think about these spinners to answer the questions below.

a. Put a 4 on the spinner that gives the white team the best chance to win.

b. What is the white team's chance of winning on the spinner with 4? _____

c. What is the chance the white team would <u>not</u> win, on the spinner with 4? _____



SUNSHINE MATH - 5
Saturn, X

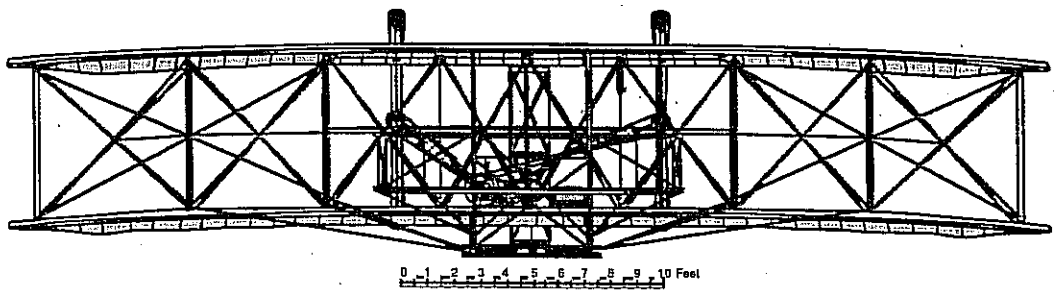
Name: _____

(This shows my own thinking.)

★★ 1. The Wright Brothers each had two flights on that famous day at Kitty Hawk. Orville flew 120 ft. and 585 ft. Wilbur flew 340 ft. and 852 ft. What was the average distance flown that day? At that rate, how many flights would it have taken them to fly a mile? (rounded to the nearest whole number)

Average distance: _____

Flights to travel a mile: _____



★ 2. Use the scale underneath the plane above to find its wingspan, tip to tip. Answer: ____ ft.

★★ 3. The regular season for professional baseball is 162 games. A player was at bat 3 times in each game, and he played in $\frac{2}{3}$ of the games.

a. How many times was the player at bat during the season? Answer : _____

b. The player hit 0.250, which means he got a hit 25% of the time, or once in every four at bats. How many hits did he get during the year?

Answer: _____

★★ 4. John needs to build a fence around his yard, which is 96 ft. wide and 120 ft. deep.

a. How much fence must he buy to enclose all four sides? Answer : _____

b. If the fence costs $12.87 for an 8 ft. length, how much will the entire fence cost before the tax is added?

Answer:_____

★ 5. A bag has 6 marbles in it. Each marble is either red, blue, or green. What is the least number of marbles that you must pull out of the bag to be sure you have two marbles the same color?

Answer:_____

★ 6. You will be given a problem like the one below when you turn in your paper. To earn your star, you'll have to estimate the answer in your head. Make up and practice some problems like this one.

Answer later: _____

The store where Janice and Kanisha shop is having a sale on summer clothes. Each of the girls wants to buy 2 pairs of shorts and three tops. If shorts and tops are on sale for $11.50 each, what is the best estimate of how much each girl will spend? Circle your answer. a. $40 b. $50 c. $60 d. $120

★★ 7. What whole number does N stand for if the number sentence below is true?

$(N + 5) + (3 \times 2) = 18$

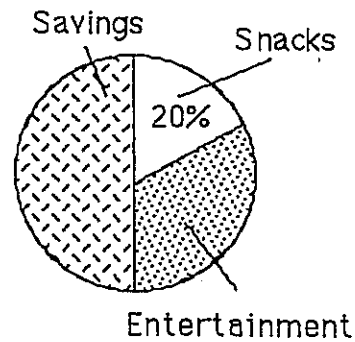
Answer : _____

★★★ 8. Danny earns $5 a week. Use the graph to answer the questions below.

a. How much money does Danny spend on snacks? _____

b. How much money does Danny save? _____

c. How much money does Danny spend on entertainment? _____



★★★ 9. Franklin School has 3 boys for every 4 girls in the fifth grade. There are 140 students in the fifth grade.

a. How many are boys? _____ b. How many are girls? _____

SUNSHINE MATH - 5
Saturn, XI

Name: _____

(This shows my own thinking.)

★★ 1. Jacqueline, Kanisha, Howard, and Billy have jobs in their group. The jobs are Recorder, Materials Manager, Time Keeper, and Reporter. Kanisha sits across from the Recorder and next to the Materials Manager. Billy hurt his hand and cannot record the work done. Jacqueline is best friends with the Reporter, and lives down the street from the Recorder. Billy rides the bus with both the Materials Manager and the Reporter. What is the task of each student?

_____ Recorder _____ Materials Manager

_____ Time Keeper _____ Reporter

★★ 2. A sheet of plywood measures 4 feet by 8 feet. Armand wants to build a dog house using one whole sheet of plywood for the floor.

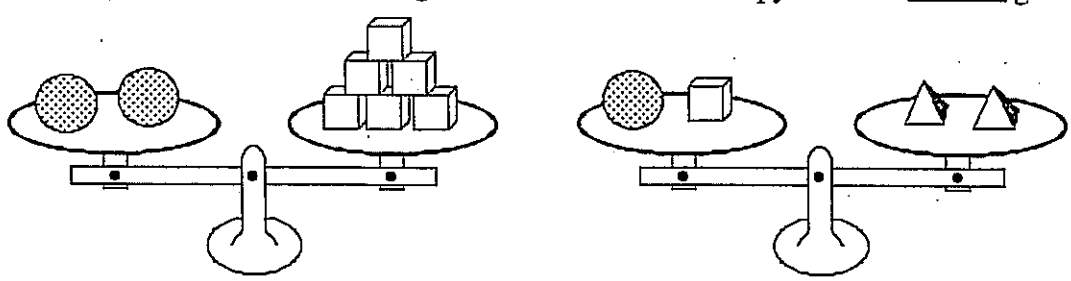
a. Armand needs to put a "2 by 4" under the outer edge all the way around the floor, and another "2 by 4" that runs down the middle lengthwise, to give support to the plywood. If "2 by 4's" are sold in 8-foot lengths, how many should he buy? ____

b. If he carpets the floor also, how many square feet of carpet should he buy? _____

★★★ 3. Pine Elementary School Chorus needs tapes to record their musical for the members. Tapes cost $7.95 for a package of 2 tapes and $11.75 for a package of 3 tapes. If 23 members want copies of the tape, what is the least amount they will have to spend?

Answer: _____

★★★★ 4. If each sphere has a mass of 120 gms, what is the mass of a pyramid? _____ gms

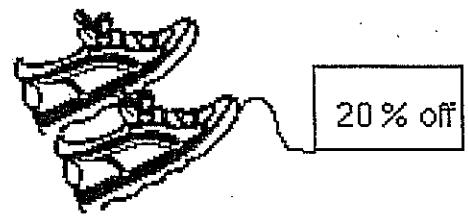


★★ 5. Sunny Ridge Elementary School was collecting cans for a food drive. The first two days of the drive, they collected 103 cans. They collected 5 cans more on the first day than on the second day. How many cans did they collect each day?

Answer : _____ 1st day _____ 2nd day

★ 6. Josie found a pair of shoes she wanted priced at $55, but she did not want to pay that much. A few weeks later, the same shoes were marked down 20%. Including the 6% sales tax, how much will she pay if she buys the shoes on sale?

Answer: _____



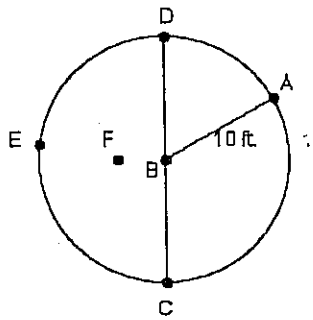
★★★★ 7. People who learn to multiply mentally usually do the opposite of what they do with paper-and-pencil. They start multiplying the "big numbers" first, and then add on the product of the smaller numbers. Watch James below:

To multiply 63 X 45, first multiply 60 X 40 to get 2400. Then add on 60 X 5 or 300, and you have 2700. Then add on 3 X 40 or 120, and you're up to 2820. Next add 3 X 5 or 15, and you have 2835. So 63 X 45 is 2835.

Practice multiplying this way with 2-digit by 2-digit multiplication problems that you make up. When you turn in your paper, you can earn 4 stars by doing a problem like this.

Answer later: _____

★★★ 8. Circle the best answer for the length of each line segment.



$\overline{FE}$	12 ft.	10 ft.	8 ft.
$\overline{CD}$	15 ft.	30 ft.	20 ft.
$\overline{BF}$	5 ft.	4 ft.	1 ft.

SUNSHINE MATH - 5
Saturn, XII

Name: _____

(This shows my own thinking.)

★★★ 1. Bob's garden is a 20 ft. x 10 ft. rectangle. Bob plants tomatoes in half of his garden; then radishes in $\frac{1}{4}$ of the remainder; then cucumbers in $\frac{1}{2}$ of what is left. The last area is planted in peppers. What part of the garden is planted in peppers?

(Hint: draw a picture)

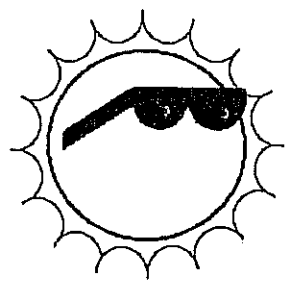
Answer : _____

★ 2. St. Augustine was founded in 1565 by Pedro Menendez de Aviles. The oldest house in that city still standing was built in 1703. How old is this house now?

Answer: _____

★★ 3. For your weekend at the beach, you have packed one pair each of red shorts, blue shorts, and tan shorts. You have also packed a white shirt, and a red shirt. How many outfits can you make with these clothes?

Answer: _____



★★★ 4. A number n is divided by 3 and the result is multiplied by 7. Then 6 is subtracted from the result to give 36. What is the original number n ?

$[(n \div 3) \times 7] - 6$ gives 36. What is n ?

Answer : n = _____

★★ 5. Which fraction is closest in value to 1? Circle the correct answer.

a. $\frac{3}{5}$ b. $\frac{2}{3}$ c. $\frac{1}{2}$ d. $\frac{7}{10}$

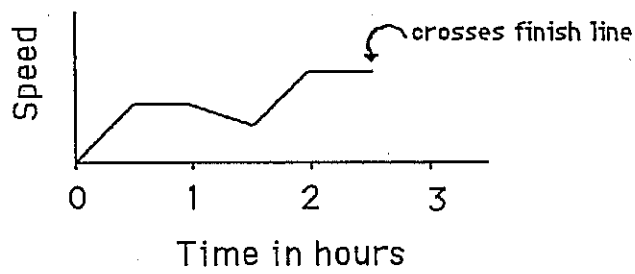
★★ 6. There are 5,280 feet in a mile. If an airplane is flying at 35,000 feet above sea level, how high is it? Bubble in the correct choice.

- 0 7 miles high
- 0 a little less than 7 miles high
- 0 a little more than 7 miles high

★★★ 7. Juan entered a bike race in which he was to ride 45 miles, stopping at certain intervals during the race to check in with the scorers. He checked in 9 times before he crossed the finish line. If the intervals were equally spaced throughout the race, how far apart were they?

Answer: The intervals were spaced every _____ miles.

★★★★ 8. The graph shows Juan's speed during the race, not counting when he stops at the checkpoints. Answer the questions below the graph.



a. About how long did Juan take to finish the race? Answer: _____

b. What can you say about Juan's speed during the first half hour of the race?

Answer: _____

c. What can you say about Juan's speed during the second half hour of the race?

Answer: _____

d. During what part of the race was Juan going the fastest?

Answer: _____

SUNSHINE MATH - 5
Saturn, XIII

Name: _____

(This shows my own thinking.)

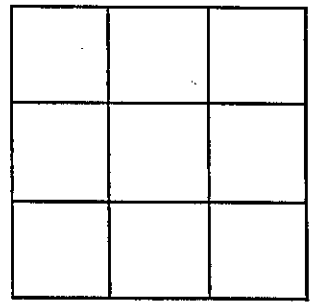
★ 1. Mr. McMathy needs 129 seats for his 5th grade program. If the seats are arranged in rows of 10 seats, how many rows will he need?

Answer: _____ rows

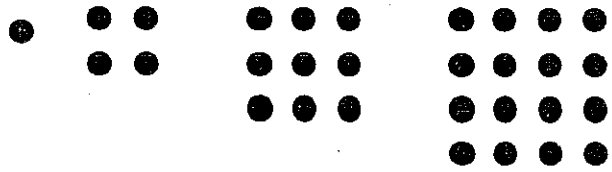
★★★ 2. In the United States, 154,000,000 tons of garbage are produced annually. On an average, about how many pounds is that each month for each person in the United States? The population of the United States is about 250 million.

Answer: _____ pounds

★★★★ 3. The horizontal, vertical, and diagonal columns of a magic square all add to the same sum. Use the digits 1 - 9 one time each to make a magic square.



★★★ 4. A *square number* is a number in which the dots can be arranged to form a square.



1 4 9 16

a. Find the next three square numbers. _____

b. Is 100 a *square number*? _____

c. Is 200 a *square number*? _____

★★ 5. How many different rectangles exist which have whole numbers as the length and width, and also have an area of 36 sq. cm?

Answer: _____ rectangles

★★★ 6. You offer to do the dishes for your family for the next month. You suggest that they can pay you in one of three ways:

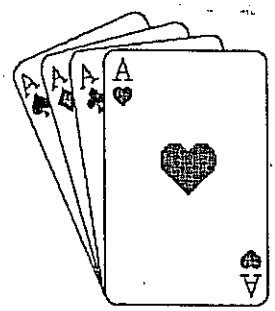
a. $0.50 each day.

b. $0.10 the first day, $0.20, $0.30 the 3rd day, and so on.

c. $0.01 the first day, $0.02 the second day, $0.04 the third day, and so on, doubling every day.

If the month has 31 days, which rate of pay would be best for you? Circle your choice.

★★ 7. You place these cards in a bag, and choose one without looking.



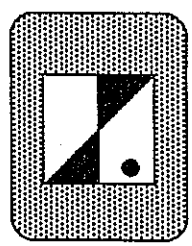
a. What is the chance you will pull out a red card?

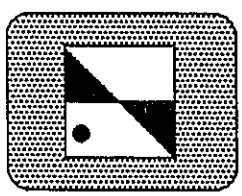
Answer: ____

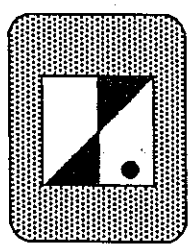
b. What is the chance you will pull out a ♣?

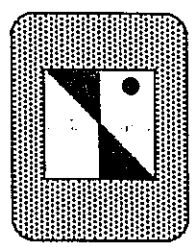
Answer: ____

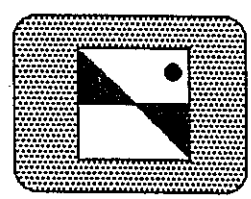
★★ 8. Marcia drew the design to the right on a piece of clear plastic. She turned it 90° clockwise, then flipped it over horizontally and flipped it again vertically. Which is her card below? Circle it.











★ 9. Find the product: **5.7 x 17.3 x 651 x 387 x 0 x 82.1 =** _____

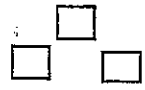
SUNSHINE MATH - 5
Saturn, XIV

Name: _____

(This shows my own thinking.)

★★★ 1. Complete each sentence by drawing a picture in the space beside it.

a.  is to as is to

b.  is to  as  is to

c.  is to  as  is to

★ 2. Fill in the missing fractions. The same fraction is used in both spaces.

$$\left(\frac{4}{8} - \quad\right) + \left(\frac{5}{8} - \quad\right) = \frac{7}{8}$$

★ 3. Solve if there is enough information. If not, tell what is missing. Becky bought a pack of paper that cost $5.95. Tony bought a pack that cost $6.49. Who bought the most paper?

Answer: _____

★★★★ 4. Maria works at the community relief center every summer. She is a really good worker. She earns $8.00 per hour for her regular 40-hours a week. Last week she worked 47 hours. How much did Maria earn if she gets "time and a half" for overtime?

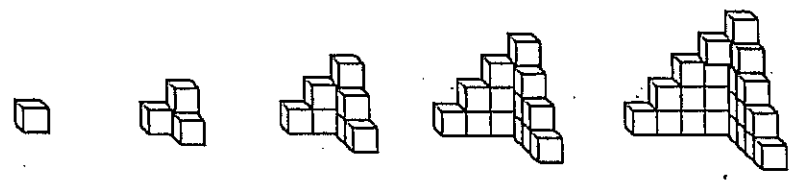
Answer: _____

★★★ 5. Complete the chart below. Each of the three students earns $5.75 per hour.

Employee work schedule and amount earned

Employee	I n	Out	Hours	Amt. Earned
Bachie	8:00 A.M.	6:00 P.M.		
Dustin	12:30 P.M.	5:00 P.M.		
Monica	9:00 A.M.	5:30 P.M.		

★★★★ 6. This pattern of buildings is made with blocks. Building 1 is made from 1 block, Building 2 from 4 blocks, and so on.



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

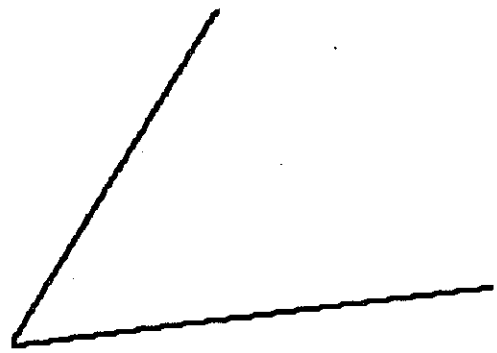
a. How many blocks are needed for Building 3? ____

b. How many blocks are needed for Building 4? ____

c. How many blocks are needed for Building 10? ____

d. How many blocks for Building n, where n could stand for any number? ____

★ 7. Fold this sheet of paper so that you ***bisect*** the angle. ***Bisect*** means that you exactly cut it in half. With your pencil, darken-in the crease in the paper. The line you draw is the ***bisector*** of the angle.



★★★ 8. Open a book and look at the two page numbers.

a. Is their sum an ***even*** number, or an ***odd*** number? _____

b. Is their product an ***even*** number, or an ***odd*** number? _____

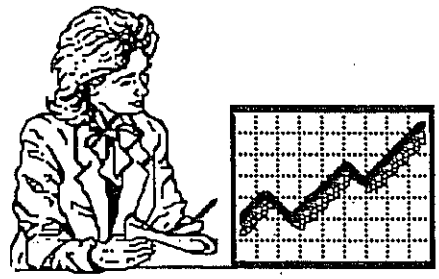
c. If you opened the book to two different pages, would your answers to (a) and (b) be the same? _____

SUNSHINE MATH - 5
Saturn, XV

Name: _____

(This shows my own thinking.)

★★ 1. Ms. Hill and Mr. Booth both had $500 to invest in the stock market. Ms. Hill bought shares of Sugarloaf at $10 per share while Mr. Booth bought shares of Dandy's Butter at $20 per share. Ms. Hill's shares went up in value $0.20 per share. Mr. Booth's shares went up $0.50 per share. How much did each earn on their shares?



Answers: Ms. Hill $_____

Mr. Booth $_____

★★★ 2. Tiffany has $20 more that Ivan. Travis has $20. All three together have $41.

How much money does Tiffany have? _____ How much does Ivan have? _____

★ 3. What number do you need to add to these numbers to get 1000? Try solving these in your head. Then practice some more like these that you make up. Use your BRAIN POWER. When you turn in your paper you will be asked to solve a problem like these in your head.

a. 300 + _____ = 1000 b. 210 + _____ = 1000

c. 450 + _____ = 1000 d. 636 + _____ = 1000

Answer for the problem given when you turn in your paper:_____

★★★★ 4. You are having a pool party and invite 2 of your best friends. These two friends each invite 2 other people. These 2 people each invite 2 people that have not been invited. How many people will be invited if this process continues for 4 rounds? (Hint: Draw a diagram.)

Answer: _____ people

★ 5. Which equation has the same solution as the first equation? Circle it.

$$n + 13 = 21$$

a. $t - 13 = 21$ b. $17 = 25 - p$ c. $9 + d = 16$

★★ 6. A box will hold 23 puzzles. How many boxes are needed to hold 238 puzzles?

Answer: _____ boxes

★ 7. A jacket Jason wants is priced at $18.99. The sales tax is 8%. What is the total cost of the jacket, including tax?

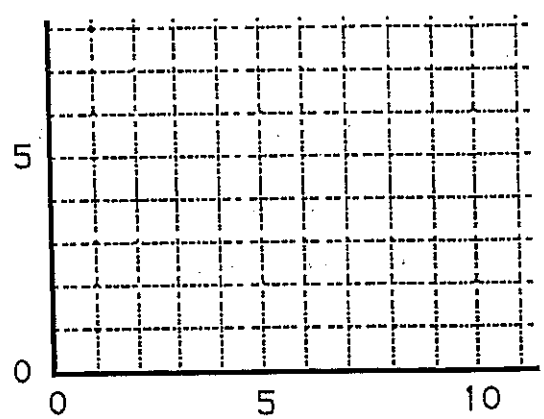
Answer: $_____

★ 8. Write the correct numbers in the boxes:

$$\begin{array}{r} 4\,\square \\ \times\ 3\ \ 5 \\ \hline 2\,\square\ \ 5 \\ 1\,4\ \ 1\ \ 0 \\ \hline 1\,\square\,4\,\square \end{array}$$

★★★ 9. Connect the points with a heavy line as described below.

a. Connect (10, 1) to (10, 7)
b. Connect (2, 1) to (5, 1)
c. Connect (7, 4) to (10, 4)
d. Connect (7, 7) to (7, 1)
e. Connect (2, 7) to (5, 7)
f. Connect (3.5, 1) to (3.5, 7)

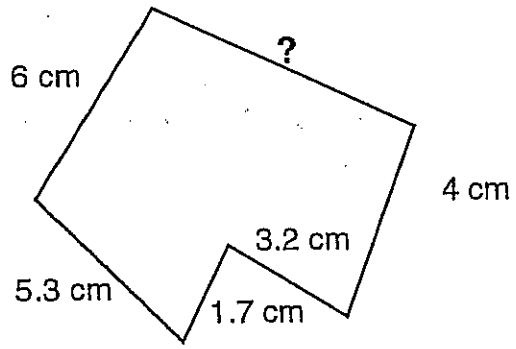


SUNSHINE MATH - 5
Saturn, XVI

Name: _____

(This shows my own thinking.)

★★ 1. Find the missing measurement. The total perimeter of the polygon is 27 cm.



Answer:_____ cm

★★ 2. Fill the missing numbers in the division problem.

$$\begin{array}{r} \square\square \\ \square 3 \overline{)\,3\,5\,1} \\ \square\square \\ \hline \square 1 \\ 9\,1 \\ \hline 0 \end{array}$$

★★★ 3. When you divide, you sometimes get a larger number than you started with. Show you understand this by placing the decimals in the answers below. The answers are correct, except for the decimal point not being there.

a. $1.25 \div 0.5 = 2\,5\,0$ b. $0.84 \div 0.7 = 1\,2\,0$ c. $13 \div 0.1 = 1\,3\,0\,0$

★★ 4. Report cards are coming out in three days. Your homework grades are 100, 90, 85, 78, 0, 80, and 92. The 0 occurred when you forgot to do your homework one night. What is the average of your homework grades?

Answer:_____

★★ 5. Using the grades from problem 4, what would your average be if you had done your homework that night, and made a 77 instead of a 0?

Answer:_____

★★★★ 6. Write an algebraic expression for each phrase below. Use the variable suggested.

a. twice as old as Max's age a, less three years _____

b. 10 times higher than the chair's height h, plus 3 inches_____

c. \$3 more than half of what Jason makes d _____

d. five trips of x miles each, plus another 5.8 miles _____

★★ 7. Kalia skateboards 5 blocks west and 8 blocks north to get to her friend's house. Each block is $\frac{1}{8}$ mile in length.

a. How far does she travel in a round trip? _____ miles

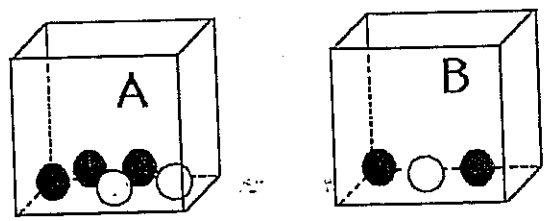
b. Rounded to the nearest whole mile, how far is a round trip? _____ miles

★ 8. Bailey has physical education class $1\frac{1}{4}$ hours on Monday, Wednesday, and Friday. How many minutes does he get physically educated each week?

Answer: _____minutes

★★★ 9. Box A has 3 black marbles and 2 white marbles. Box B has 2 black marbles and 1 white marble.

If you have to close your eyes and pick a *black* marble to win a prize, which box gives you the best chance of winning? Bubble-in your answer.



0 Box A gives the best chance.

0 Box B gives the best chance.

0 The boxes give the same chance of winning.

SUNSHINE MATH - 5
Saturn, XVII

Name: _____

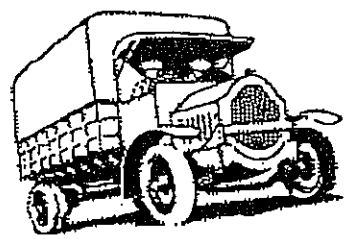
(This shows my own thinking.)

★★ 1. Learn to use mental math to do these problems with a 1-digit divisor. When you turn in your paper, you will have a chance to do one like these and write your answer below.

$2\overline{)10678}$ $3\overline{)2145}$ $5\overline{)2540}$ $6\overline{)12018}$ $4\overline{)2128}$ $7\overline{)4949}$

Answer later: _____

★★ 2. Marcus drives a delivery truck and spent $89 on gas his first week. If he drives for 8 months using about this much gas each week, how much would he spend on gas? Use estimation to find the answer to the nearest $1000.



Answer: _____

★ 3. These numbers are examples of palindromic numbers.

232 11 505 325523

Find four other numbers that are palindromic.

Answer: _____, _____, _____, _____

★ 4. What do the numbers above have in common with this sentence?

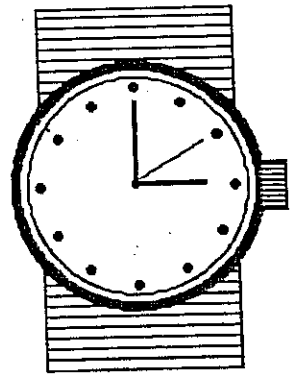
A man, a plan, a canal, Panama!

Answer: _____

★★ 5. Someone your age has an average pulse rate of 70 beats per minute and is ten years old. This means that, for an average person your age, the heart has already beat about how many times? Round your answer to the nearest hundred million.

Answer: _____

★★★ 6. Marcus noticed that at 3:00 o'clock, the hour and minute hands on his watch made a *right angle*. He was curious about the angles formed inside the right angle, when the second hand was pointing at the 2:00 o'clock marker. What two angles would this make inside the right angle?



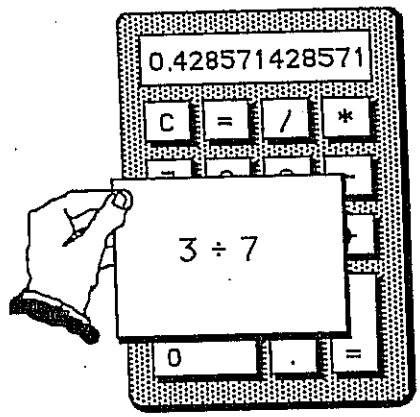
Answer: _____ degrees and _____ degrees

★★★ 7. On a 12-digit calculator, 3 ÷ 7 will give the answer shown. The calculator can't show the division process any farther. But the digits continue to repeat in this manner.

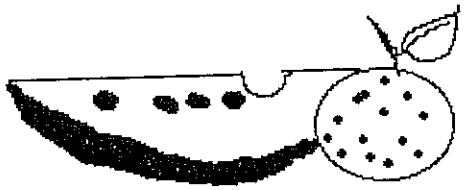
a. What will the 13th digit be? _____

b. What will the 14th digit be? _____

c. What will the 100th digit be? _____



★★ 7. When Bonita makes a fruit salad, she always uses oranges and watermelons. This time she has 11 pieces of fruit. If she uses at least one of each and more oranges than watermelons, show all possible combinations by filling in the chart below.



Oranges					
Watermelons					

★★★ 8. A bracelet cost $33.50. The earrings cost $12.65. How much does it cost to purchase the set if you get 10% off for buying both, and the sales tax is 6%?

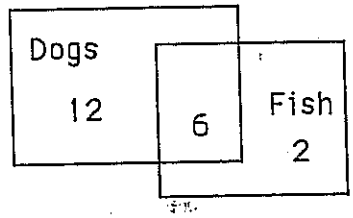
Answer: $_____

SUNSHINE MATH - 5
Saturn, XVIII

Name: _____

(This shows my own thinking.)

★★ 1. In the third grade, some students have pets that are dogs, some have fish, and some have both. Use the Venn diagram to answer the questions.



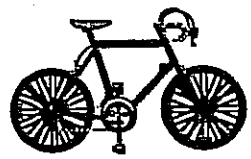
a. How many students have fish? _____

b. How many students have fish and a dog?_____

★★ 2. You ran 1.5 miles before you decided you were running in the wrong direction. You turned around and ran back to where you started. Then you ran 2.75 miles in the other direction. How many miles did you run in all?

Answer: _____miles

★★ 3. It takes about 735 turns of an average 5th grader's bicycle tire to go 1 mile. To the nearest thousand, how many times would your tire turn around if you biked beside the runners in a 26-mile marathon?



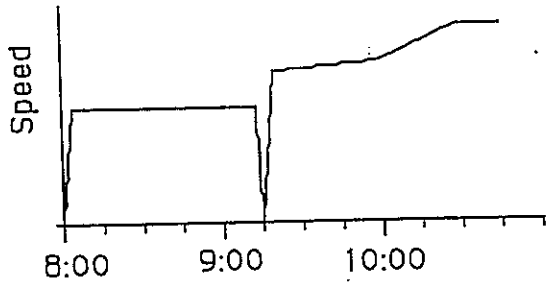
Answer: _____ turns

★★★ 4. The graph below shows what a bicycle's speed might look like for a 26-mile marathon. The race started at 8:00 AM. Answer these questions about the graph.

a. How long did the race last? _____ hours and _____ minutes

b. At what time did the rider stop to get water? _____ A.M.

c. What is happening to the rider's speed between 10:00 and 10:30? _____



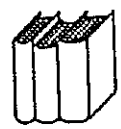
★★★ 5. Mrs. Jones' science class had to record the total amount of rain that fell the last week of school. It rained 1.66 inches on Monday, 0.23 inches on Tuesday, 0.76 inches on Wednesday, 1.2 inches on Thursday, and the skies were clear on Friday. What was the average amount of rain that fell daily from Monday to Friday? Round your answer to the nearest hundredth.

Answer: _____ inches

★ 6. Take a sheet of paper and fold it in half, fold it again, fold it again, fold it again, and then fold it again in half. If you opened the paper, how many sections would you have?

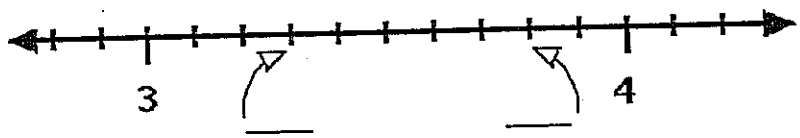
Answer: _____ sections

★★ 7. During the summer, Julio promised his Dad he would read 3 novels every 2 weeks. How many novels would that be during the 3 months of summer? (use 12 weeks for 3 months)



Answer: _____

★★ 8. Write two numbers in the spaces below to show what the two "tick marks" stand for on the number line, between 3 and 4.



★★ 9. Mary had 10 yards 2 feet of ribbon. She needed to cut pieces for her 3 friends. If each friend got the same amount of ribbon, how much did each get? In your answer, there cannot be more than 12 inches

Answer: ____ yards, _____ foot, _____ inches

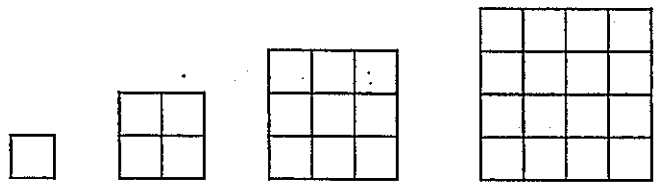
(Note: in your answer, inches must be converted to feet, if possible, and feet to yards.)

SUNSHINE MATH - 5
Saturn, XIX

Name: _____

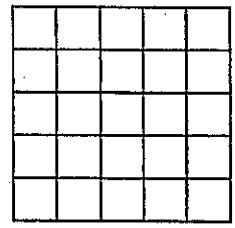
(This shows my own thinking.)

★★★★ 1. How many different squares are in each figure? Count the smallest squares first, then move up to the next size, and so on. Record the total number of squares below each figure and look for a pattern.



___ ___ ___ ___

★★ 2. Herman thought he noticed a pattern to the problem above. The total number of squares is always the sum of the square numbers up to the figure number. For the 3rd figure, for example, the total number of squares is 14, which is also $1^2 + 2^2 + 3^2$.

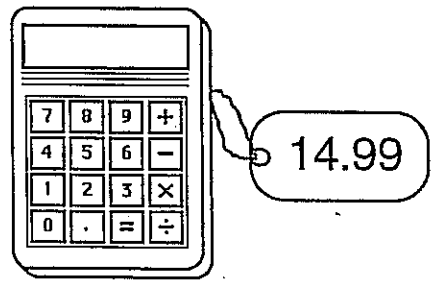


a. Does this pattern work for the next figure, the 5th? _____

b. What is the total number of squares in the 10th figure? _____

★ 3. Aki bought a new calculator for school. What is the cost of the calculator including sales tax of 6%? Round your answer up to the next cent, as a store would.

Answer: _____



★★★ 4. Complete the chart below by putting a check in each column by which the number is divisible. You may have more than one number checked in each row or column. The first one is started for you.

		2	3	4	5
a.	6,945		✔		
b.	1,236,240				
c.	54,208				

★ 5. Draw the other half of the shape to make it symmetrical. If it helps you, fold the page along the vertical *line of symmetry*, hold it up to the light, and trace.

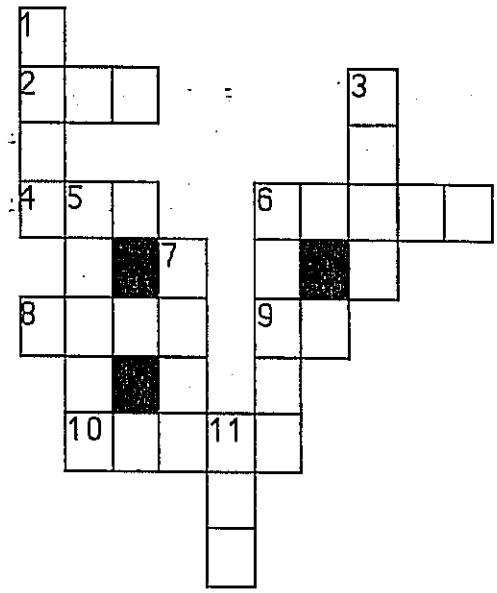
★★★★ 6. Complete the crossnumber puzzle.

DOWN

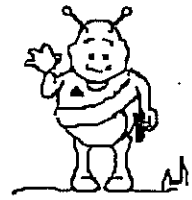
1. (28 X 126) - 21
3. ? + 716 = 4220
5. 6521 + 9963 - 12321 + 42896 + 30286
6. (364 X 265) - 41282
7. Average of 4728, 9630, 7465, and 725
11. $\sqrt{100489}$

ACROSS

2. 6000 - ? = 5486
4. 280644 ÷ (300 + 64)
6. $35^3 + 100^2 + 170$
8. $3 \times 10^3 + 3 \times 10^2 + 7 \times 10^1 + 6 \times 10^0$
9. Age the second year as a teenager
10. {[(238 ÷ 14) + 20] X 1560} + 18



★★★★ 7. This weird kid from another planet multiplies differently from us! She gets the right answer, but her work doesn't look like anyone else's in class. Here's what she does:



Given:	*Multiply 2 X 38:*	*Multiply 40 X 38:*	*Add:*
42 X 38	42 X 38 76	42 X 38 76 1520	42 X 38 76 + 1520 1596

Do these problems this way:

14	31	27	62
X 26	X 53	X 42	X 135

SUNSHINE MATH - 5
Saturn, XX

Name: _____

(This shows my own thinking.)

★★★ 1. A *perfect number* is one which is the sum of its proper divisors. Six is the smallest *perfect number*: $6 = 3 + 2 + 1$. The next smallest *perfect number* is between 20 and 30. Find it!

Answer : _____

★★ 2. Find the missing digits in this problem.

```
      317 r 25
   2 _| __584
      __1
      ____
        48
        2__
        ___
        214
        18__
        ____
          25
```

★★★ 3. Carlos wants to learn to play golf, but he wants some information before he begins. He learned that the local 18 hole golf course is 6,550 yards long. It is a "par 72" course, which means that a good golfer should play the entire course with a total of 72 strokes.

a. What is the average distance (rounded off) for each hole? _____

b. What is the average number of strokes required per hole? _____

c. For his first round, Carlos scored 108.
How many strokes over par was he? ____

★ 4. A can of soda contains approximately? (circle the best answer)

350 ℓ 350 mℓ 350 cℓ

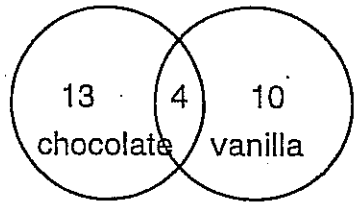
★★★ 5. Shomika was helping her family pick oranges in their grove. She took some oranges home to share with three friends. She gave 3 more than half to Jennifer. Angela got half of the remainder and 3 more. She gave Josie half of the remainder plus 3. When she got home, she only had 10 oranges left. How many did she have when she left the grove?

Answer :_____

★ 6. Solve this problem:

$3 \times (8+6) - 8 = Y$ Answer: $Y =$ _____

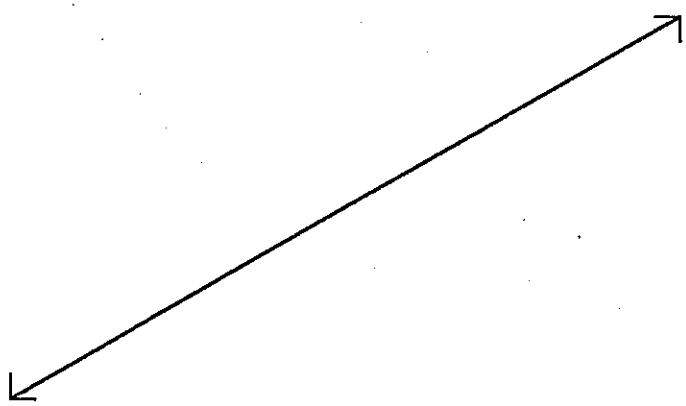
★★ 7. Joann's class is planning a math celebration after half the class scores at least 100 stars in Sunshine Math Superstars. She surveyed the class to find out how many like chocolate cupcakes and how many like vanilla cupcakes. She organized the information to give to her mom, who is going to do the baking. Her results are shown to the right:



a. How many students were surveyed? ____

b. What percent (rounded to the nearest whole percent) like chocolate cupcakes? _____ %

★ 8. Fold your paper to show a line that is *perpendicular* to the one below .



★ 9. Five fifth graders decided to clean up their community on Earth Day. Armed with dozens of garbage bags, they began work at 8:30 AM. They took two 15 minute breaks and a half-hour lunch break. When they had worked 5 hours, they knew it was time to go home. What time did they quit working?

Answer: _____

★★ 10.

3 weeks, 4 days, 13 hours, 21 minutes
− 1 week, 5 days, 18 hours, 30 minutes
___ week, __days, __ hours, __ minutes

SUNSHINE MATH - 5
Saturn, XXI

Name: _____

(This shows my own thinking.)

★★★ 1. Use the numbers 1, 2, and 4 to make the numbers from 1 to 9. Use each of the three numbers only once and use only the four arithmetic operations. The first one is done for you.

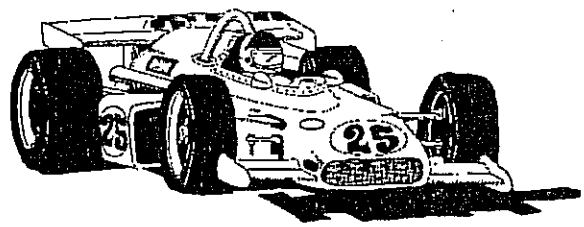
Example: 4 - 2 - 1 = 1 _____ = 4 _____ = 7

_____ = 2 _____ = 5 _____ = 8

_____ = 3 _____ = 6 _____ = 9

★★ 2. Race car driver Brad Heath was interviewed about his car's fuel use. He told the reporter that his car averages 3 miles per gallon. If his car holds 22 gallons of fuel, how far can he race on a tank of fuel?

Answer: _____ mi.



Racing fuel costs $3.40 per gallon. How much does the tank of fuel cost?

Answer : _____

★★ 3. Jan's class is entering a contest. The winner will receive tickets for the student and parents to visit the city of their choice. Jan lives in Buffalo, NY, so she would travel from New York. The distance in miles from New York to four European cities is given to the right.

Berlin	3,965
London	3,458
Paris	3,624
Moscow	4,665

a. What is the difference between the nearest and farthest European cities?

Answer: _____ miles

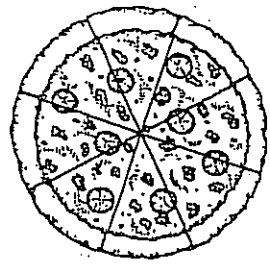
b. Jan's mother flies to Paris and back to New York once every month. How many miles does she fly each year? (Round to nearest 1000 miles.)

Answer: _____ miles

★ 4. One acre of land will grow 11,000 heads of lettuce. If a farmer has 1,500 acres of land and he plants lettuce on half of his farm, how many heads of lettuce can he expect to grow?

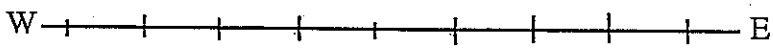
Answer: _____ heads

★★★ 5. Harry and William bought a pizza for $8.99. Harry ate five pieces and William ate 3. Based on how much each one ate, how much should each pay?



Answer: Harry should pay _____ ; William should pay _____.

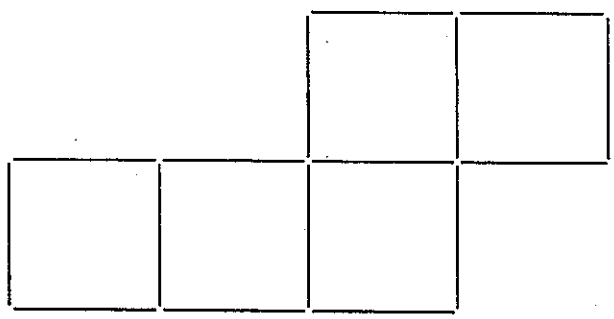
★★ 6. Use the clues to locate these points on Second Street.



Second Street

The antique store, A, is at the *midpoint* (middle) of the street.
The museum, M, is 2 cm. west of the restaurant.
The restaurant, R, is 4 cm. east of the antique store.
The gift store, G, is 8 cm. west of the restaurant.
The theater, T, is halfway between the antique store and the museum.

★★★ 7. Draw arrows to show how to rearrange exactly 2 of these toothpicks so that you will have 4 squares instead of 5. Each square is to be the same size as the ones shown.



★★★ 8. How much change will I get back from a $5 bill if I buy three pairs of socks selling as advertised? Sales tax is 6%.

Answer: _____

SALE!!
Socks ....2 pairs for $1.98

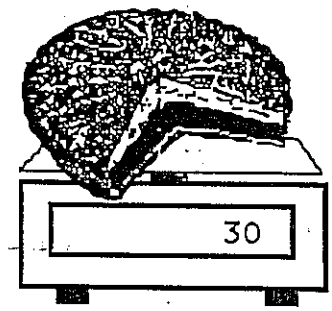
★ 9. $\frac{3}{4}+\frac{1}{2}+\frac{5}{6}-\frac{1}{3}+\frac{7}{12}=$ ☐ (Be careful -- $\frac{1}{3}$ is being subtracted!)

SUNSHINE MATH - 5
Saturn, XXII

Name: _____

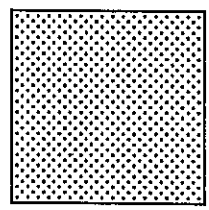
(This shows my own thinking.)

★ 1. Let p stand for the weight of a whole pie. The equation $\frac{3}{4}p = 30$ shows the situation on the scale. How much did the whole pie weigh? Use your number sense.



Answer: $p =$ _____

★★★ 2. A *square inch* is shown to the right.



Bubble-in the best estimate below of the area, in square inches, of this sheet of paper.

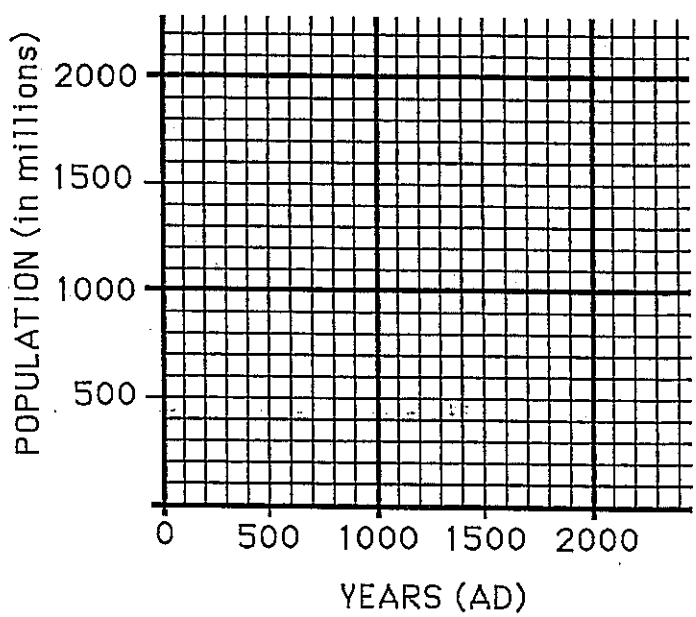
0 50 in^2 0 90 in^2

0 125 in^2 0 150 in^2

★★ 3. Make a *line graph* of the world population figures shown below. Use the graph paper to the right. Then answer this question: *If the population continues to increase as the graph shows, what will it be in 2000 AD?* _____

World Population

Year (AD):	Population (millions):
1	300
1000	350
1600	450
1700	700
1800	1,000
1900	1,700



★★★★ 4. A machine changes the first number into the second number. Study the pattern and predict the rule the machine uses to change one number into another.

1	fl	7
2	fl	10
3	fl	13
.	.	.
.	.	.
.	.	.
10	fl	34
.	.	.
.	.	.
100	fl	304

a. What will the machine produce for 40? ____

b. What will the machine produce for 50? ____

c. The machine produced 904. What number did it start with?____

d. Describe the way the machine changes a number *n*:

_____

★★ 5. There are about 3,400 species of frogs and toads, and scientists tell us that they represent 90% of the amphibians in the world. Using this information, what is the total number of amphibian species scientists believe are in the world. (Round your answer to the nearest 100.)

Answer : _____

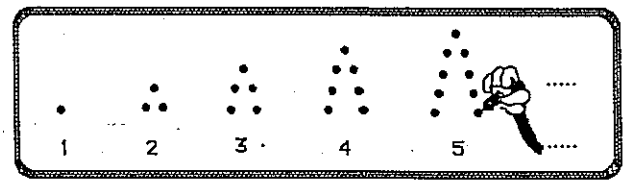
★ 6. Suzanne ordered a sandwich and a soda. The total, plus tax, came to $4.76. Suzanne gave the clerk $5.01. What is a good reason for Suzanne to give the clerk the extra penny?

Answer: _____

★★ 7. The missing digits for this problem are 0, 2, 4, 6, and 8. Put them in their correct boxes.

☐☐☐☐ x ☐ = 32,208

★★★ 8. Draw this pattern on scratch paper.



a. How many dots in the next 3 figures?

____, ____, and ____

b. How many dots for the 50th figure?____

c. How many dots for the 1000th figure? _____

SUNSHINE MATH - 5
Saturn, XXIII

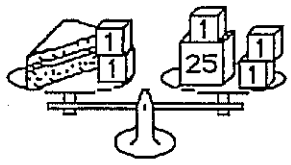
Name: _____

(This shows my own thinking.)

★ 1. Laquinda and her 2 friends wanted a pizza after school. They did not have enough money, but Laquinda's mother promised to give them what they needed once they put their money together. Laquinda had \$2.45; one friend had \$3.72; the other friend had \$0.87. How much did Laquinda's mother have to pay for the pizza if the total cost was \$9.95?

Answer: _____

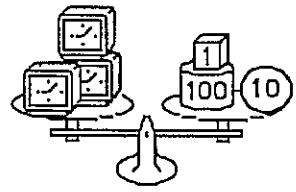
★★★ 2. Use number sense to solve each equation. Find out what a single object weighs.



A piece of cake weighs:

$x + 2 = 28$

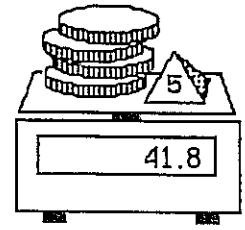
$x =$ ____



A clock weighs:

$3y = 111$

$y =$ ____



A coin weighs:

$4z + 5 = 41.8$

$z =$ ____

★ 3. Circle the best estimate below for the sum of $13\frac{38}{39}$, $7\frac{16}{17}$, $4\frac{1}{9}$, and $4\frac{1}{42}$.

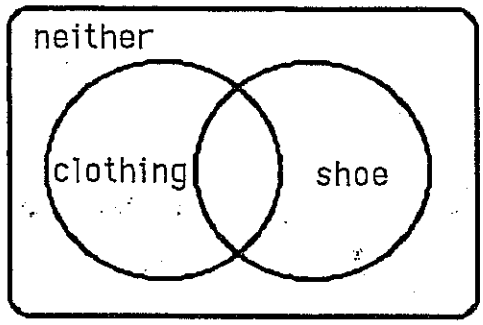
a. 28 b. 30 c. $28\frac{23}{46}$ d. 20

★★ 4. Raoul's "school days" picture was accidentally made with a grid behind it. Estimate the area of the part of his body that is showing. Circle the best estimate below.

a. 40 sq. units c. 60 sq. units

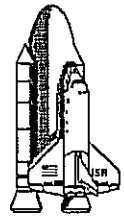
b. 50 sq. units d. 80 sq. units

★★ 5. 100 adult customers were surveyed to determine which type of shop in the mall -- clothing store or shoe store -- they liked best. Forty-seven liked clothing stores best. Twenty-three preferred shoe stores. Fourteen liked both equally well. The rest did not like either type of store. Write 4 numbers in the appropriate section of the Venn diagram below to show these statistics.



★ 6. Space shuttle Atlantis has traveled a distance of 2,000 miles one and a half minutes into its flight. If it continues to travel at this speed, how far will it have traveled in six minutes?

Answer: _____ miles



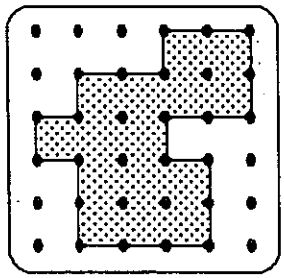
★★ 7. Joseph has a nickel and a penny in one pocket and two nickels and two pennies in the other pocket. Which pocket gives him the better chance of pulling out a penny?

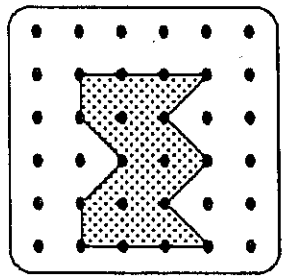
Answer : _____

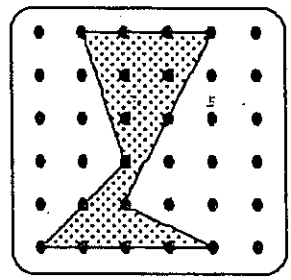
★ 8. Betty Jean has 18 coins. One sixth of the coins are quarters, one third of the coins are dimes, and one half of the coins are nickels. What is the value of Betty Jean's coins?

Answer: $_____

★★★ 9. Write the area of each geoboard figure on the line below the figure.







area = _____ area = _____ area = _____

SUNSHINE MATH - 5
Saturn, XXIV

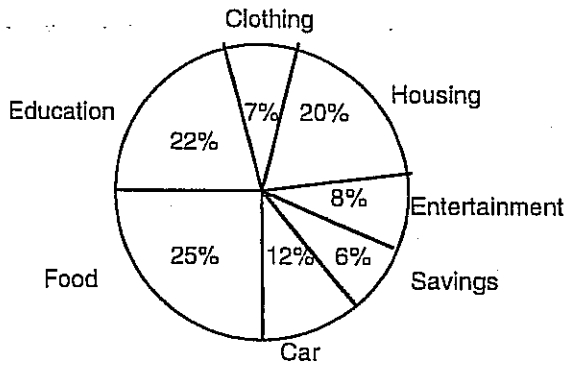
Name: _____

(This shows my own thinking.)

★★ 1. There were 22,600 tickets sold for the Magic's first game. 4,800 fewer people showed up for the second game. If tickets were $25 each, how much money was brought in by the two games?

Answer:_____

★★★★ 2. Marshall makes $20,000 a year. His budget is shown to the right.



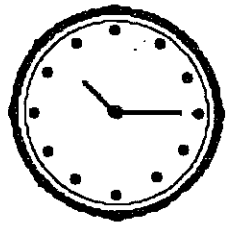
a. What is the sum of the percents on the graph? _____

b. Does Marshall spend more money on education or on food? _____

c. How much money does he spend on his car? $_____

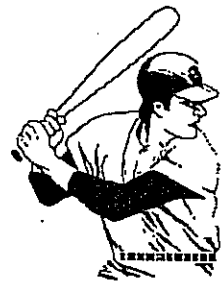
d. What is the total amount of money Marshall spends on clothing, entertainment, and savings? $_____

★★ 3. Juanita could not see the classroom clock hung on the back wall of the room without turning around in her seat. But one day she discovered that she could see it by using the mirror in her purse. If this is what she saw, what time was it?



Answer: _____

★ 4. Emily and Morris were discussing how fast a baseball travels. They asked Emily's Dad to hit a ball. The machine measured the ball's speed at 98.70465 miles per hour. Round this speed to the nearest hundredth mile per hour.



Answer: _____ mph

★★★ 5. Write an algebraic expression for each situation below, using the variable given.

a. three times as high as the stack of books, x, plus 2 feet: _____

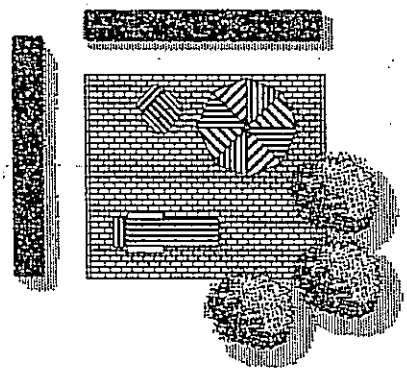
b. \$100, less twice Taria's money saved, s: _____

c. one-half of Marcia's time, t, less 2 minutes: _____

★★ 6. Patti helped her Mom plan a patio. Estimate about how many bricks they should order. Circle the best estimate below, to have a few left over for breakage.

a. 800 b. 600

c. 1000 d. 700



★★ 7. Spring is the time for snorkeling. Marcus enjoys snorkeling around the beach area at Panama City. Circle the temperature when he might enjoy this sport the most.

a. 0°C b. 25°C

c. 50°F d. 80°C

★★★★ 8. A man has a goose, a fox, and a bag of corn with him walking through the woods. He comes to a river, but there is only one boat available for crossing. The boat will only hold the man and one other thing each time across the river.

The man can't leave the fox and goose alone on the river bank, because the fox will eat the goose. He can't leave the goose and corn alone, because the goose will eat the corn.

What's the fewest number of crossings he can make in the boat, to get everything on the other side? (A *crossing* means going from one side of the river to the other.)

(Hint: draw a diagram.) Answer: _____ crossings

SUNSHINE MATH - 5
Saturn, XXV

Name: _____

(This shows my own thinking.)

★★ 1. The Drew Elementary School softball team needs bats and mitts for their team. If bats cost $12 and mitts cost $15, what is the greatest number of items they can buy for $200 if they buy at least one of each?

Answer: _____

SALE!
Bats $12
Mitts $15

★★★ 2. The numerator and denominator of a fraction are single digits which total 13. When you divide the numerator by the denominator, the answer is 0.86 rounded to the nearest hundredth. What is the fraction?

Answer:_____

★★★ 3. Use the menu to answer the questions.

Hamburger	$1.49	*Hot Dog*	$1.25
	Small		Large
Fries	$.75		$.95
Cola	.79		.99
Shake	1.25		1.75

a. If you buy a hamburger, small fries, and small cola, what will your bill be after adding the 7% sales tax? (Remember, stores will round any part of a cent *up*!)

Answer : _____

b. If you give your server $5.00, how much change will you receive?

Answer : _____

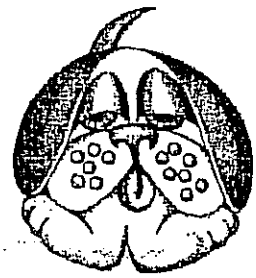
c. If you had $2, what combinations of food would you be able to buy with no items the same, if your friend agrees to pay the tax for you?

Answer : _____

_____

★ 4. Elvira was solving a complicated math problem. In her last step she divided by 5 and got the answer 13. Then she realized she should have multiplied by 5 instead of dividing by 5. What should her answer really have been? _____

★★★ 5. Mason was told by the vet to keep up with the weight of his 6 pups, which all looked alike. He weighed them by putting them all in a wooden box and weighing them together -- the scale showed 50 pounds. Then he weighed the box by itself -- it weighed 8 pounds. Answer the questions about Mason's equation for finding out how much each pup weighed.



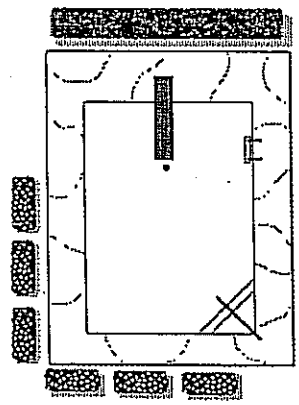
Equation: $6 \times W + 8 = 50$

a. What does W stand for in the problem? _____

b. Why is W multiplied by 6 in the equation? _____

c. What value for W solves the equation? _____

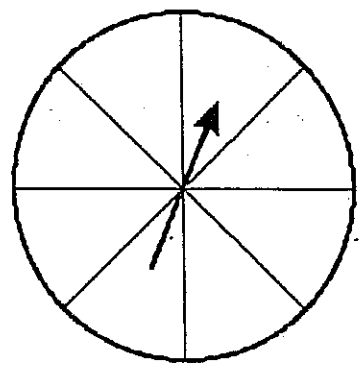
★★★ 6. Maxine's family wanted to build a pool in their backyard. The pool itself was to be 20 feet by 30 feet, and they wanted a 5-foot wide concrete border around it.



a. What are the dimensions of the whole area, pool plus concrete walk? ____ by ____

b. Before buying water sealer for the concrete walk, they need to know how many square feet of concrete they'll have to seal. How many square feet of concrete will there be? _____

★★ 7. Label the sections of the spinner R for red, B for blue, and G for green so that you will land on red one-fourth of the time, on blue half the time, and on green one-fourth the time.



SUNSHINE MATH - 5
Saturn, XXVI

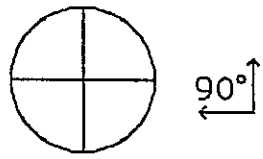
Name: _____

(This shows my own thinking.)

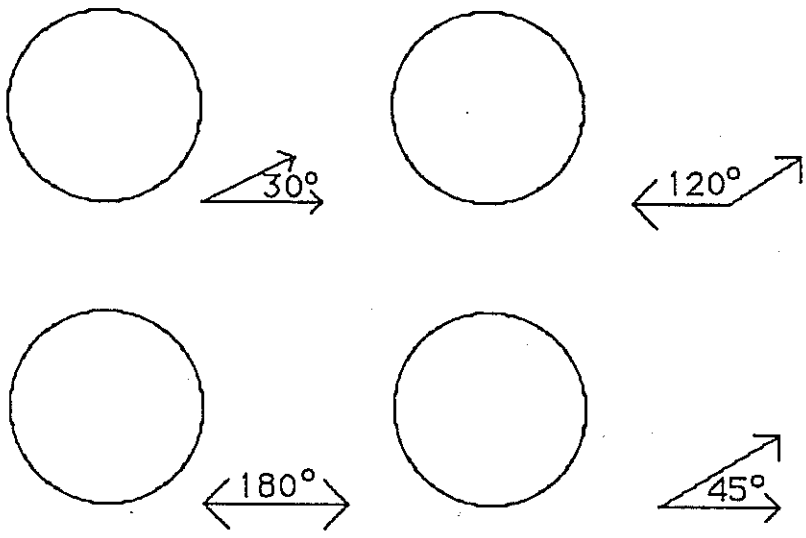
★★ 1. Saturn's diameter is about 71,000 miles. Its rings extend from the surface another 35,000 miles into space. What is the distance from the center of Saturn to the outer edge of its rings?

Answer: _____miles

★★★★ 2. The circle shown here has four congruent angles drawn at the center. The angles are congruent to the 90° angle off to the side.



Draw as many angles as possible at the center of these circles which are congruent to the angles shown. All angles within each circle must share sides.



★★ 3. Find the pattern and write the next three numbers. Then answer this question: What number comes three numbers before the 2 if the pattern were extended to the left? _____

$$2,\ 1,\ \frac{1}{2},\ \frac{1}{4},\ \_\_\_\_,\ \_\_\_\_,\ \_\_\_\_,\ \ldots$$

★★ 4. Anne has duplicates of 125 stamps in her collection. She gives 50 to Sam, then she divides the remainder evenly among five friends. If two of her friends put their stamps together, how many will they have?

Answer : _____ stamps

★★★ 5. Henri spun a 3-color spinner 45 times. He filled in this tally chart and needs to complete it. Fill in the information he forgot.

Red	𝍸 𝍸 |	13 / 45
Blue	𝍸 𝍸 ||	
Green		

★★ 6. Complete the problem.

$$\begin{array}{r} 9\,2\,\square \\ \times\ \square\,8 \\ \hline \square\,\square\,7\,6 \\ \square\,2\,\square \\ \hline 1\,6,5\,9\,\square \end{array}$$

★★★ 7. Susan's age is 3 times Andrea's age. Barbara is twice as old as Andrea. The sum of their ages is 30. How old is each girl?

Susan is ____ years old; Andrea is ____ years old; Barbara is ____ years old.

★★★ 8. Andy wants to run a 3-mile race at the same pace all the way through the race. He knows he can do this in 24 minutes. He stations his Dad at the 2-mile mark to give him his time as he passes by. His Dad calls out 15:30 as he passes by. What else did his Dad say? Circle the best choice:

a. Great! You're right on time!

b. Slow down! You're ahead of your pace!

c. Speed up! You're lagging behind your pace!

SUNSHINE MATH - 5
Saturn, XXVII

Name: _____

(This shows my own thinking.)

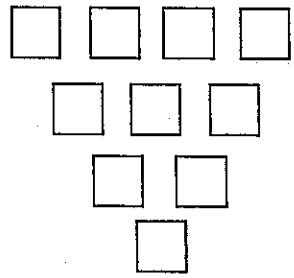
★ 1. Brandon counted 13 kids ahead of him in line to buy concert tickets. He then counted 17 behind him in line. Five more kids got "heads" from someone ahead of him, but then 2 kids behind him dropped out. How many kids were in the line at that point?

Answer : _____

★★ 2. Juan had 7 pennies, 4 dimes, and 3 nickels in his pocket. If he reached into his pocket 10 times, putting the previous coin back each time, which number best indicates how many times you would expect him to pull out a penny? Circle your answer.

a. 7 b. 10 c. 1 d. 5

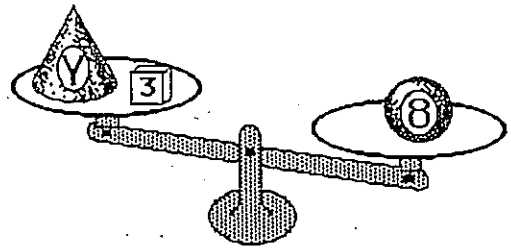
★★★★ 3. Place each number from 1 through 10 in a box. Each box must contain a number that is the *difference* of two boxes above it, if there are two above it.



★★ 4. What are the whole numbers that Y might represent on the scale, and the right side would still be heavier? Or, find the whole numbers Y which will make this number sentence true:

$$Y + 3 < 8$$

Answer: _____



★★★★ 5. The first 500 people to visit the baseball game were given their choice of an autographed ball, a cap, a pennant, or a cup with the team logo. $\frac{1}{4}$ chose the ball, $\frac{1}{2}$ chose a cap, $\frac{1}{10}$ chose a pennant. How many of each gift were given away?

Answer: ____ balls, ____ caps, ____ pennants, and ____ cups

★★ 6. Circle the sensible measurement for each item.

thickness of a book	28 mm	28 cm	28 m
height of a flagpole	10 cm	10 m	10 km
distance walked in $\frac{1}{2}$ hour	3 mm	3 kg	3 km
length of a field	30 dm	30 m	30 mm

★ 7. Jay earns $10 each week during the summer mowing lawns in his neighborhood. His parents require him to save 25% of his earnings. If he works 9 weeks during the summer, how much can he expect to save by the end of the summer?

Answer: _____

★★★★ 8. The fifth grade was surveyed to find which pets they liked. The diagram shows the results:

a. How many like dogs and birds but not cats? ____

b. How many like only cats? ____

c. How many like dogs, cats, and birds? ____

d. What is the ratio of students who like all pets to those who answered the survey? _____