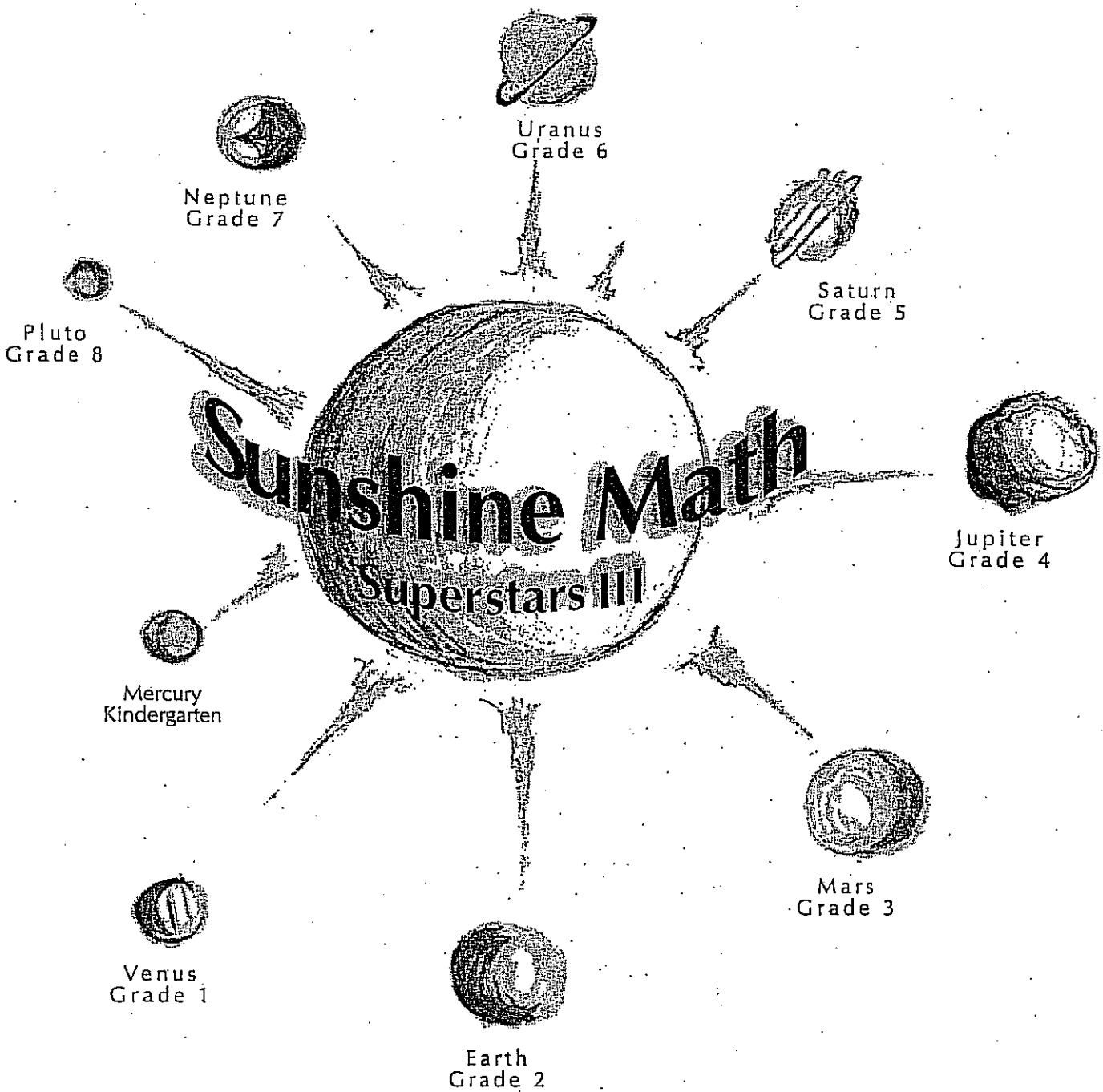


Jupiter
Grade 4

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*:

Jan Anderson	Cathy Foss	Lynda Penry
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.

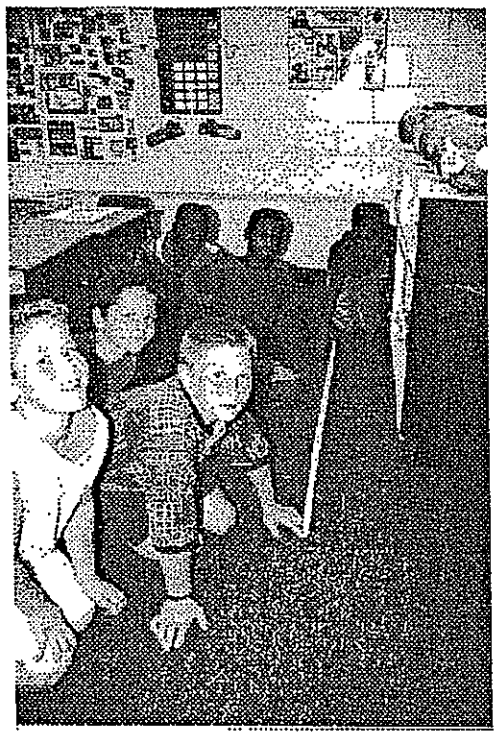
Additional copies of *Sunshine Math* may be purchased at cost from the Panhandle Area Educational Consortium (PAEC), 753 West Boulevard, Chipley, Florida 32428, or by contacting the PAEC Distribution Center:

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.

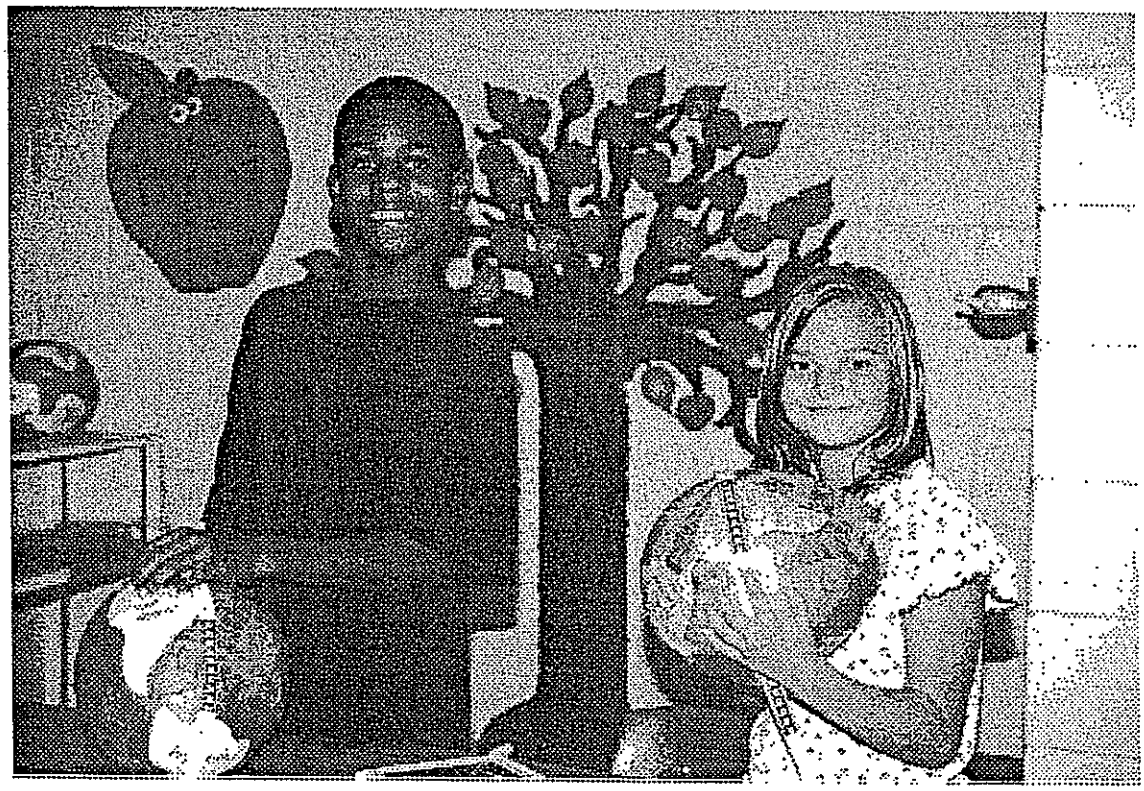
ORGANIZATION OF THESE MATERIALS

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

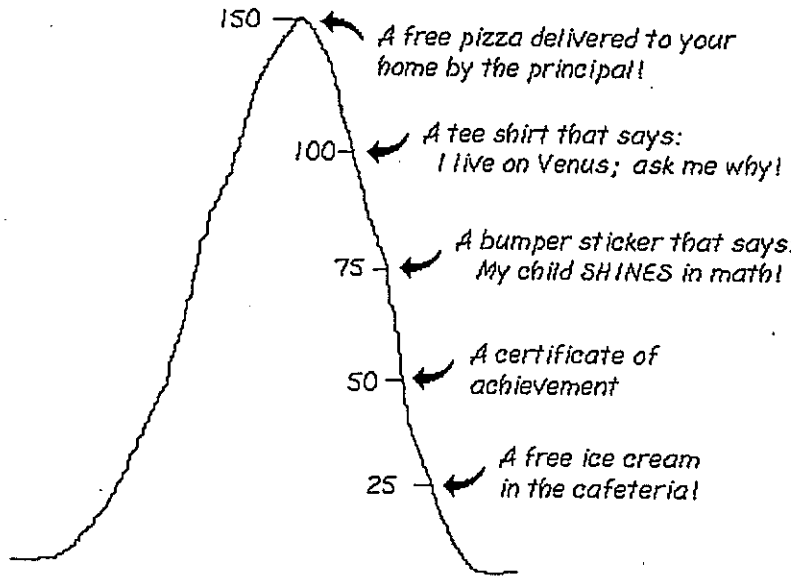
Sunshine Math is a K-8 enrichment package for mathematics, designed to be managed by volunteer assisting adults with coordinated support from the classroom teacher and school administrators. The purpose of the program is to give self-motivated students of all ability levels a chance to extend themselves 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!

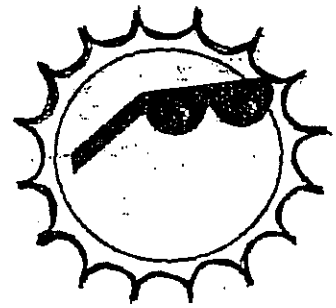
Checklist for assisting adults:

- ❑ 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.

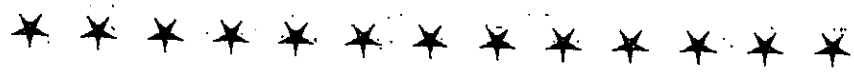
- ✓ Remember that part of the *Sunshine Math* philosophy is that students learn responsibility by following the rules of the system, if participation is important to them. *Sunshine Math* becomes very important to certain students, so they will adhere to rules about where their names goes on each paper, 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)

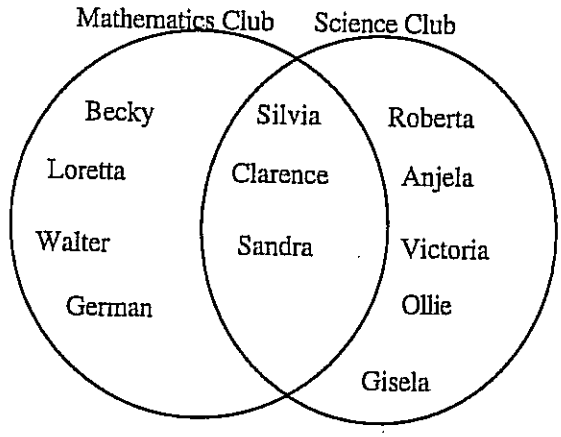
WORKSHEETS

SUNSHINE MATH - 4
Jupiter, I

Name: _____

(This shows my own thinking.)

★★★★ 1. The students in Mr. Renick's 4th grade class started a mathematics club and a science club. They drew a Venn diagram to show which students were in each club. Use the Venn diagram below to answer the questions about the clubs.



(a) How many students were in the mathematics club? _____

(b) How many students were in the science club? _____

(c) How many students were in both clubs? _____

(d) If one-half of Mr. Renick's class is in either the math club or the science club or both clubs, what is the total number of students in Mr. Renick's class? _____

★★ 2. How many right angles are in this picture of intersecting square frames, including the background?

Answer:_____ right angles

★ 3. If the 7th day of a month is on Friday, on what day is the 24th day of the same month?

Answer: _____

★★★★ 4. Think about the following list of number pairs. Three is the first number of a pair, and 8 is the second.

3 → 8
4 → 11
5 → 14
6 → 17
. .
. .
. .
10 → 29
. .
. .
. .

a. If 50 is the first number, what is the second number? ____

b. If 200 is the first number, what is the second number? ____

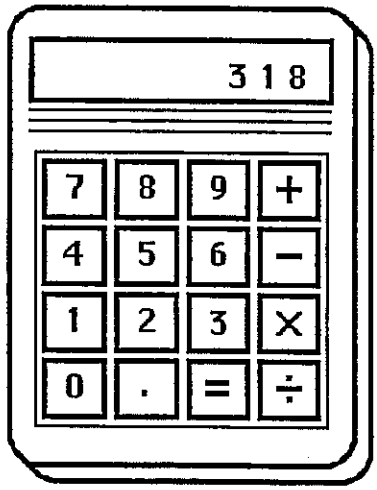
c. If 89 is the second number, what is the first number? ____

d. If a number n is the first number, what is the second number? _____

★★ 5. The sum of two whole numbers is 72. Their difference is 48. What are the two numbers?

Answer: _____ and _____

★ 6. Henry was at the store, and used his calculator to add up the price for 2 loaves of bread. He got the number shown in the display, but didn't know exactly how much money that was. How much money would those two loaves cost? Circle the correct answer below.



a. $318

b. 3.18¢

c. $318.00

d. $3.18

★★ 7. In your class, 9 students received an "excellent" on a recent project. Your teacher would like to buy pencils for those 9 students. The school store sells them for 10 cents each or 3 for 25 cents. What is the least amount of money your teacher will have to spend in order to buy one pencil for each of the 9 students?

Answer: _____cents

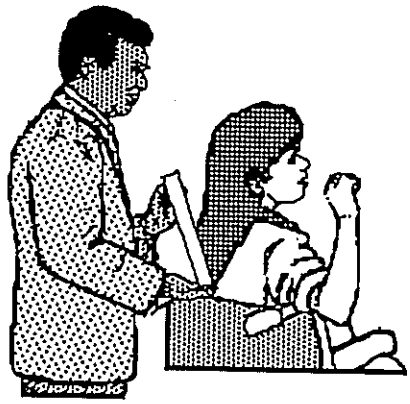
SUNSHINE MATH - 4
Jupiter, II

Name: _____

(This shows my own thinking.)

★★ 1. Hair grows about $\frac{1}{2}$ inch each month. After you shave your head, how many years will it be until your hair is 1 foot in length?

Answer: _____ years



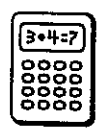
★★ 2. Robert received a weekly allowance of $6 on Monday. He put 50% of his money in his empty piggy back, but then took out 50% of that money to go to a movie. How much money was left in the piggy bank?

Answer: $_____

★ 3. An arcade video game had a code built in. In order to play the game Tamika had to find the missing numbers. Help her by filling in the pattern below.

113, _____, 95, 86, 77, _____, 59, _____, 41, 32, 23, 14, 5.

★★★ 4. Sabrina used a calculator and started adding the whole numbers in order:



1 + 2 + 3 + 4 + 5 + ...

What is the last number she would add that would get the sum on her calculator over 1,000?

Answer:_____

★★ 5. Marcus, Aaron, and Jason went to a double feature movie. The show began at 1:45 pm and lasted for 4 hours and 27 minutes. At what time did the show end?

Answer:_____

★ 6. Maria, Colleen, Patsy, and Kenyada are 8, 9, 10, and 11 years old.

Maria is older than Patsy and younger than Kenyada.

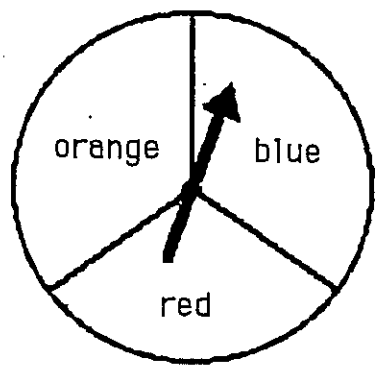
Colleen is younger than Marie and older than Patsy.

What is each girl's age?

Answers: Maria: _____ years old. Patsy: _____ years old

Colleen: _____ years old Kenyada: ____ years old

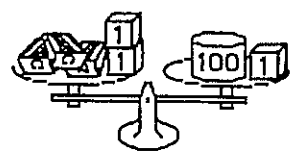
★★★★ 7. On a game board, landing on blue means to move ahead 1 space, landing on red means to move ahead 2 spaces, and landing on orange means to move back 1 space. If you took 30 spins, about where would you expect to be on the game board, relative to where you started?



Answer: I would be about ____ spaces _____ .
(ahead or behind)

★★★ 8. Margarit liked to balance things. She balanced 3 pencil sharpeners and 2 one-gram blocks with a 100-gram weight and another one-gram block. She let x stand for the weight of one pencil sharpener, and she claimed that $x = 30$ grams. Was she correct? If not, how much did each pencil sharpener weigh?

Answer: _____



SUNSHINE MATH - 4
Jupiter, III

Name: _____

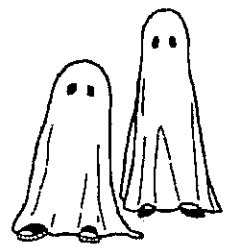
(This shows my own thinking.)

★★ 1. After filling in the multiplication table below, Parker noticed some number patterns. Fill in the chart and follow the directions beneath it.

×	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Draw a circle around the line of numbers that has only *square numbers* in it.

★★★ 2. Mr. Jackson is preparing bags of treats to give trick or treaters on Halloween. He has 48 pieces of candy and 60 pieces of gum. He uses all the candy and gum, and he puts the same ratio of candy to gum in each bag. What is the largest number of bags he could have made?

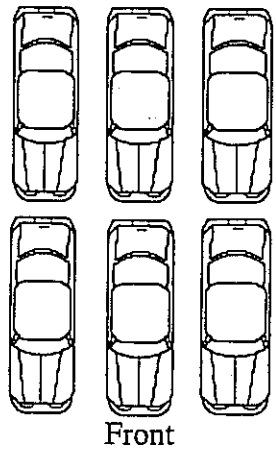


Answer:_____

★ 3. It is now 10:45. What time will it be in 2 hours and 15 minutes?

Answer: _____

★★ 4. Six cars are parked in front of a local car dealers lot. You are looking at the cars from the front.



- *The red car is parked in front of the green car.*
- *The black car is between the green car and yellow car.*
- *The blue car is parked on the right side of the red car.*
- *The orange car is parked in front of the yellow car.*

Color the cars to show how they are parked, or write the name of the color on each car.

★ 5. Susan made $15.00 baby-sitting. She spent $11.15 on a birthday present, including tax. To the nearest dollar, how much does she have left ?

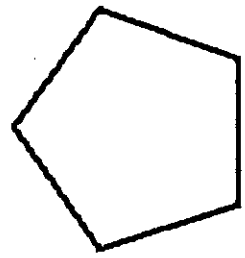
Answer: _____

★★★★ 6. The Disney Golf Classic starts with 64 golfers. The golfers form pairs and each pair plays a match. The losers drop out and the winners of each pair then form new pairs and play again. Then those winners form pairs and play. This continues until there is one winner.

a. In how many matches must the winner play? _____

b. How many matches are played by all the golfers, to determine the winner? _____

★★★ 7. Draw all the lines of symmetry for this polygon.



★★★ 8. A number has 4 digits.
No digits in the number are repeated.
The digit in the tens place is three times the digit in the thousands place.
The number is odd.
The sum of the digits in the number is 27.

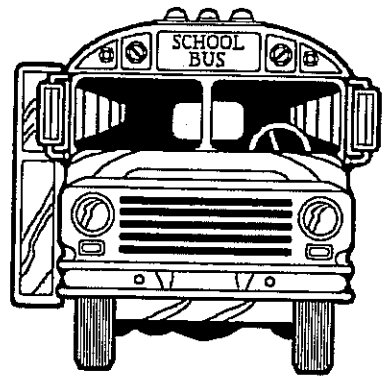
What is the number? Answer: _____

SUNSHINE MATH - 4
Jupiter, IV

Name: _____

(This shows my own thinking.)

★★ 1. A school bus makes 7 stops on its trip to school and 7 stops on the trip home.



a. How many stops will the bus make in one full week of school? _____

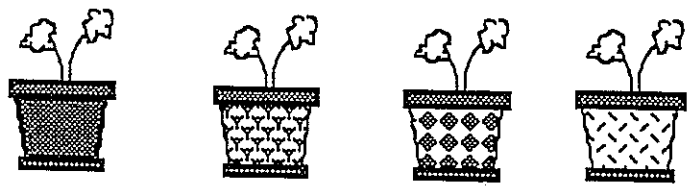
b. How many stops will the bus make in the 180-day school year? _____

★ 2. When Michelle woke up yesterday, the temperature was 72° F. By lunch time, the temperature had risen 15° F. By dinner time, it had fallen 22° F. What was the temperature at dinner time?

Answer: _____ ° F

★★★ 3. Teresa has 4 flower pots in 4 different designs. She likes to display her flower pots in different positions on her window sill. How many different ways can she place her flower pots?

Answer:_____ways



★★ 4. What is the mystery number x?

- x has 3 digits.
- The tens digit is half the hundreds digits.
- The number is odd.
- The sum of the digits is 9.

Answer: $x =$ _____

★ 5. If the 7th day of the month is on a Tuesday, on what day is the 25th?

Answer:_____

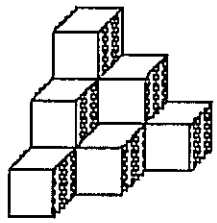
★★★ 6. On the average your heart beats about 72 times per minute. At this rate, about how many times will it beat:

a. in a 30-day month? _____

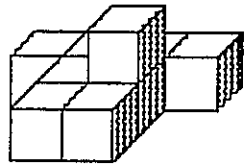
b. in a year? _____

c. in your lifetime, if you live to 72 years of age? _____

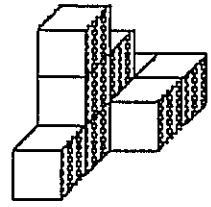
★★★ 7. The volume of a shape is the number of cubes it will take, all the same size, to make the figure. Each figure is made of stacks of cubes that are 1 centimeter on each side. Find the volume of the figures below.



a.



b.

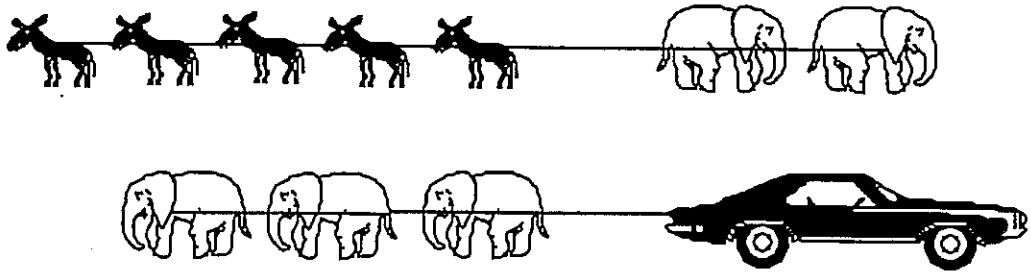


c.

Answer: a._____ cm^3 Answer: b_____ cm^3 Answer: c_____ cm^3

★★★ 8. In a tug of war, 5 donkeys are exactly equal to 2 elephants. In another tug of war, 3 elephants are equal to 1 car. Which team should win if a car and 3 donkeys are matched against 4 elephants?

Answer: _____



SUNSHINE MATH - 4
Jupiter, V

Name: _____

(This shows my own thinking.)

★★★★ 1. A normal person blinks about 25 times per minute when awake.

a. How old will you be on your next birthday?

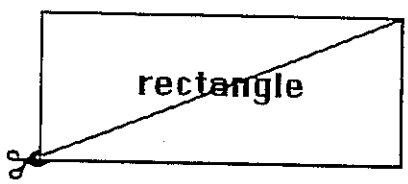
b. To the nearest million, how many times will you have blinked on your next birthday? Assume you sleep 8 hours each day.

Answers: (a) _____ (b) _____

★★ 2. Pablo has $3.15 in dimes and quarters. He has more quarters than dimes. How many quarters and dimes does he have?

Answer: _____ quarters and _____ dimes

★★★★ 3. Use a centimeter ruler and a separate sheet of paper to draw an 8 cm. by 6 cm. rectangle. List its perimeter on the table below. Then cut out the rectangle and also cut along the diagonal as shown in the picture below. Use your two pieces to create 4 new geometric shapes. After making each shape, determine its perimeter. Below list the names of the shapes made and their perimeters.



SHAPE	PERIMETER
rectangle	____
_____	____
_____	____
_____	____
_____	____

★ 4. Fill in the missing digits:

$$\begin{array}{r} 4\,\square\,6\,8 \\ 5\,\square\,6 \\ +\,\square\,9\,4\,\square \\ \hline 1\,1,1\,1\,1 \end{array}$$

★ 5. *Century* is to *decade* as *dollar* is to: (a) penny (b) nickel (c) dime (d) quarter

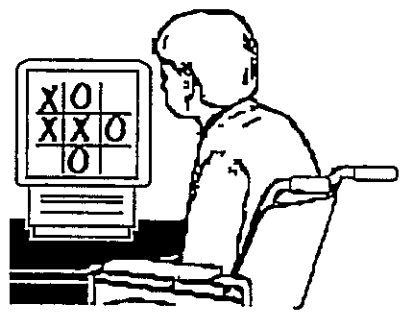
Answer: _____

★★ 6. Roberto ate 3 pieces of a pizza and then felt that he should pay $\frac{1}{4}$ of the cost because that's the fraction he ate. How many pieces was the pizza cut into?

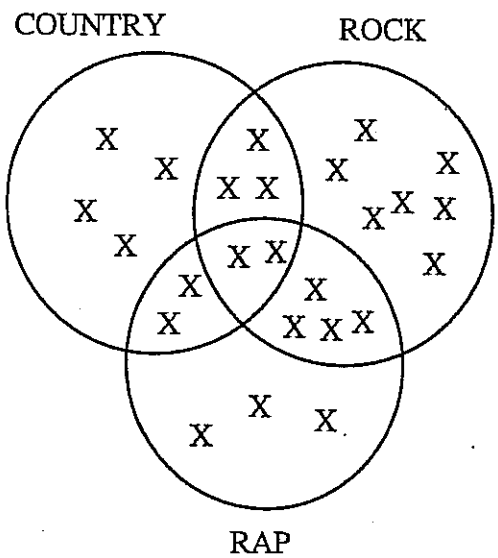
Answer: _____ pieces

★★★ 7. Thomas is playing tic-tac-toe with a computer. It is the computer's turn to place an "X" on the board. If the computer makes its moves at random in the open spaces, what is the chance it will win on this move?

Answer: _____



★★★★ 8. Answer the questions below using the Venn Diagram showing Ms. Berger's students musical preferences.



CLASS CENSUS

How many students took part in the all class census?

_____

How many students prefer only rap?

_____

How many students prefer only rock and country?

_____

How many students prefer rap or country but not rock?

_____

SUNSHINE MATH - 4
Jupiter, VI

Name: _____

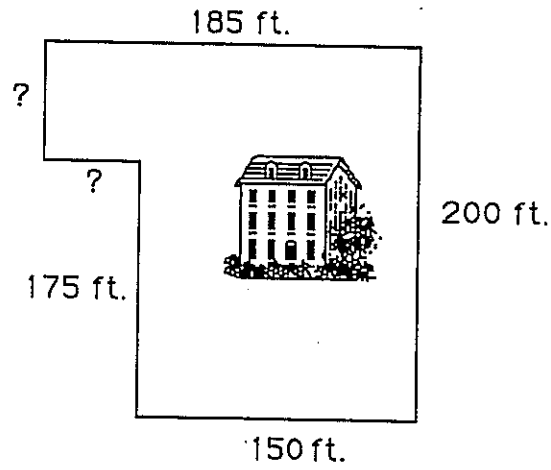
(This shows my own thinking.)

★★ 1. Jean went on a vacation with her parents in their family car. They left their home in Florida on Monday at 7:15 a.m. and arrived in North Carolina on Tuesday at 11:45 a.m. How long was their trip?

Answer: _____ hours and _____ minutes

★★★ 2. Mr. Brown wanted to put up a fence around his property. How many feet of fencing did he need? The lawn is outlined to the right, but the picture is not drawn to scale.

Answer: _____ feet



★★★ 3. Find the next number in the patterns below.

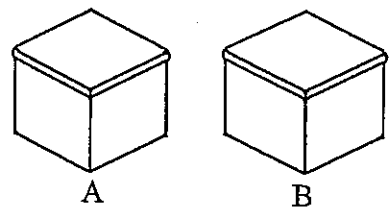
(a.) $32.10 → $32.30 → $32.50 → $32.70 → $32.90 → $_____

(b.) 720 → 360 → 180 → 90 → ____

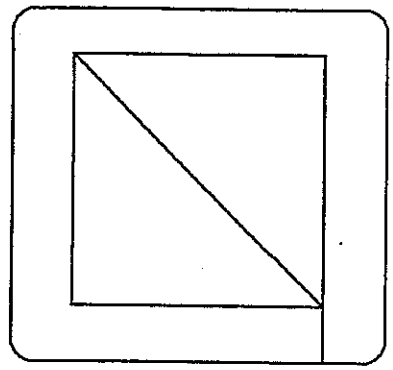
(c.) $\frac{1}{2} \rightarrow \frac{1}{4} \rightarrow \frac{1}{8} \rightarrow \frac{1}{16} \rightarrow$ ____

★★★★ 4. Box A has 3 red marbles and 2 yellow marbles. Box B has 2 red marbles and 1 yellow marble. If you have to pick a red marble to win a prize and you can not look in the box, which box would give you the best chance of winning the prize?

Answer: _____



★★ 5. You can trace over this figure with a pencil without retracing any path, if you start in the right place. Find the two places where you can do this, and draw circles around them.



★ 6. If 5 is added to a number n and the answer is multiplied by 2, the result will be 24. What is the number n?

Answer: $n =$ _____

★★★ 7. Estimate the answers below. Circle the best choice.

a. $3\frac{10}{11} + 2\frac{1}{101}$ Choose: 4 or 5 or 6 or 7

b. $5\frac{2}{47} - 2\frac{1}{35}$ Choose: 2 or 3 or 4 or 5

c. $6\frac{17}{19} \times 7\frac{3}{290}$ Choose: 42 or 49 or 63 or 213

★★★ 8. You need $\frac{1}{2}$ cup of sugar to make a three-layer cake. How much sugar would you need for a one-layer cake?

Answer: _____

★ 9. What is the product of the ten one-digit numbers? Answer: _____

SUNSHINE MATH - 4
Jupiter, VII

Name: _____

(This shows my own thinking.)

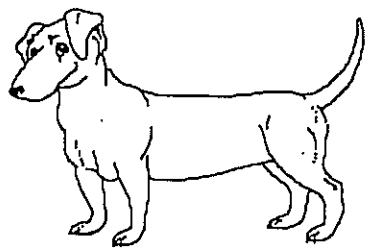
★★★★ 1. One green, one red, and one blue marble are placed in a bag. The days of the week are written on seven pieces of paper and put in another bag. You can draw from either bag for a $1 million prize. To win, you must either draw a weekend day -- Saturday or Sunday -- or a blue marble. Which bag gives you the best chance of winning, the marble bag or the day-of-the-week bag?

Answer: _____

★ 2. One disposable diaper will stay in a landfill, without decomposing, for 2000 years. If you put 4 disposable diapers into a landfill tomorrow, how long will it be before they are all decomposed?

Answer: _____ years

★★★ 3. Faye has 20 feet of fencing to make a rectangular pen for her dog. What is the largest area that she can fence in?

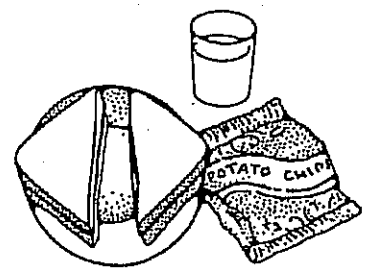


Answer: _____ square feet

★★ 4. Herman's lunch came to $4.27, and he gave the clerk $5.02. Why did he give the clerk two extra pennies?

Answer: _____

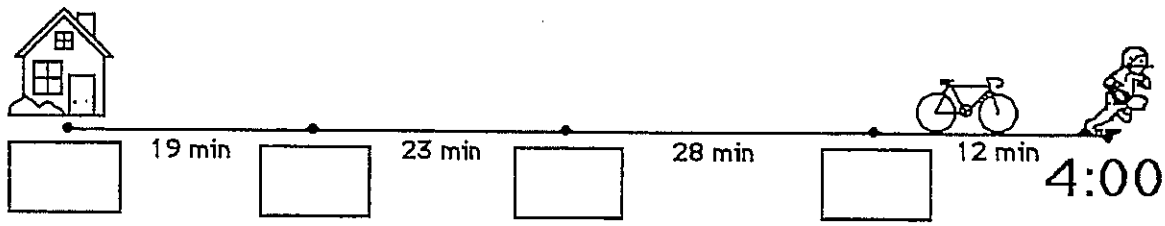
_____



★★★ 5. Juan's age is 3 times Derrick's age, and Tyrone is twice as old as Derrick. The sum of their ages is 30. How old is each boy?

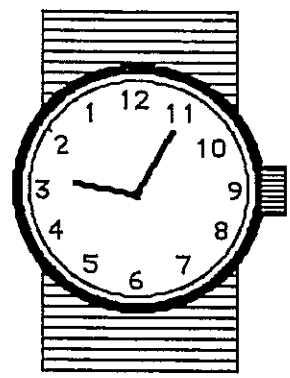
Answers: Juan is _____; Derrick is _____; Tyrone is _____

★★ 6. Maurice and his 3 friends ride their bikes to football practice each afternoon after school. Maurice leaves his house and goes to each friend's house, and they travel on together. He has timed each part of the trip. Practice starts at 4:00 sharp. Write in each box below when Maurice should arrive, so they won't be late for practice. Also write in the time he should leave his own house.



★★ 7. This watch is unusual -- it runs *counterclockwise*. What time will it be 4 hours and 45 minutes from the time shown?

For your answer, draw the hour and minute hands where they should be on this watch.



★★ 8. An adult has about 5 quarts of blood. When they donate a pint for a sick friend, what fraction of their blood do they give away?

Answer: _____

★★ 9. The human body is about 70% water, by weight.

a. How many pounds do you weigh? _____ pounds

b. How many pounds of you is water? _____ pounds

SUNSHINE MATH - 4
Jupiter, VIII

Name: _____

(This shows my own thinking.)

★★ 1. What number is as much greater than 36 as it is less than 94?

Answer:_____

★★★ 2. Find a pair of numbers for each sum and product. Write your answers in the blanks.

	Numbers	Sum	Product
Example →	5 , 3	8	15
	____ , ____	10	24
	____ , ____	12	20
	____ , ____	14	48
	____ , ____	16	63
	____ , ____	18	45
	____ , ____	31	30

★★★ 3. Ashley, Jonathan, Sarah, Carlos, and Tanya all made the finals of the National Math Fair Competition last year. Before the final round began, each one had to shake hands with all the others. How many handshakes were there?

Answer: _____ handshakes

★★ 4. Karen's first five grades are: 92, 88, 99, 97, and 89. If she has an average of 94, she'll get an A on her report card. Find Karen's average. Will Karen get an A or a B?

Answer: Karen will get a(n) _____.

★ 5. Find the missing digits. Write the completed problem below to the right.

$$\begin{array}{r} 5\square,682 \\ -\ 43,8\square6 \\ \hline 6,786 \end{array}$$

Answer:

★ 6. On the Fourth of July, a typical temperature in Florida during the day would be:

a. 12^{o} C b. 120^{o} F c. 36^{o} C

Answer:_____

★★ 7. Rachel mailed out 12 party invitations and the stamps cost $0.32 each. She paid for her stamps with a five dollar bill. How much change should she receive?

Answer: _____

★★★★ 8. In these addends, each letter represents a single digit. Find the numbers. Write the completed problem below, on the right hand side.

$$\begin{array}{r} CENT \\ CENT \\ +\ SCENT \\ \hline 35128 \end{array}$$

Answer:

★★ 9. To change "dog years" to "people years," you multiply the dog's age by 7.

a. How old, in people years, is a 10-year old dog? _____

b. How old are you? _____ How old a dog is equal to you in age? _____

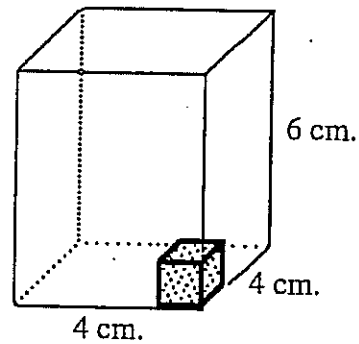
SUNSHINE MATH - 4
Jupiter, IX

Name: _____

(This shows my own thinking.)

★★ 1. The *volume* of a box is the number of cubes it would take to fill it up. If each cube is a centimeter on the edges, the volume would be given in *cubic centimeters*. What is the volume of the 4 cm x 4 cm x 6 cm box to the right?

Answer: _____ cubic centimeters

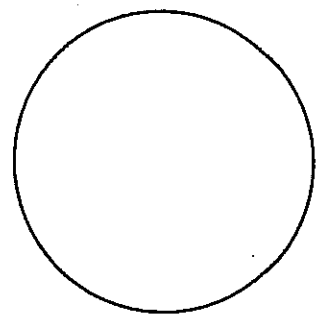


★★★ 2. Mario got his $10.00 weekly allowance on Monday. He spent 25% of his weekly allowance on Tuesday, 15% of his weekly allowance on Wednesday, and 10% more on Thursday. How much money did he have left to spend for the rest of the week?

Answer: _____

★★ 3. Shade in $\frac{3}{4}$ of $\frac{1}{2}$ of $\frac{1}{2}$ of the circle. What fraction of the circle is shaded?

Answer: _____ is shaded



★★★★ 4. How many outfit combinations are possible with 1 pair of sneakers, 3 tee-shirts and 2 pairs of jeans? Drawing a diagram might help to illustrate your strategy.

DIAGRAM:

Answer: _____ outfits are possible

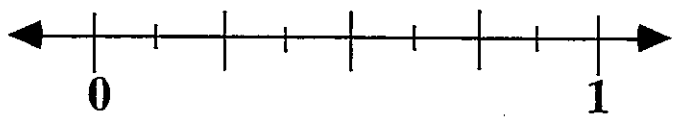
★★★ 5. Sonya has x amount of money. Bob has three times as much as Sonya has, less \$14.62. Write an expression, using x, that tells how much does Bob has.

Answer: \$ _____

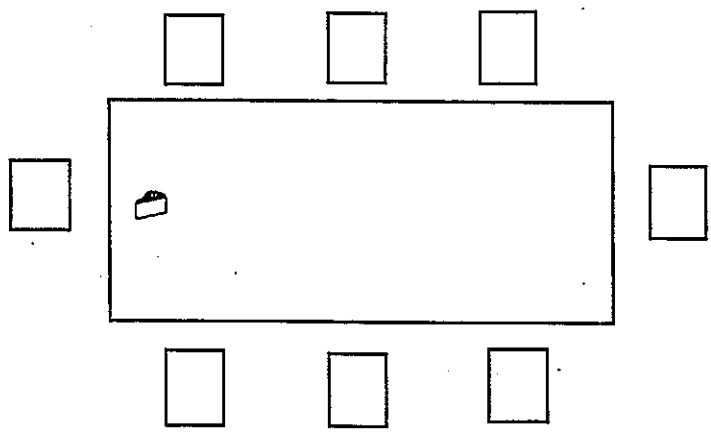
★ 6. Mr. Harmen graded 56 papers Monday and 87 papers Wednesday. How many papers did Mr. Harmen grade in the two days?

Answer: _____

★ 7. Place the letter X on the number line where $\frac{5}{8}$ would be.



★★ 8. Use logic and the clues given to find out who will be sitting in what chair at the Halloween party. Fill each chair with the character's initial.



CLUES

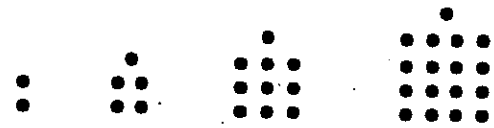
The Jack-o-lantern sits on the Ghost's immediate right.
Sleeping Beauty sits across from the Prince.
The Witch is to the right of Sleeping Beauty.
The Prince sits between the Jack-o-lantern and the Fireman.
The Ghost sits at the head of the table with the wedge of cheese.
The Clown sits to the left of the Robot.

SUNSHINE MATH - 4
Jupiter, X

Name: _____

(This shows my own thinking.)

★★ 1. Draw the fifth and sixth figures to follow the pattern of dots below.



1 2 3 4 5 6 .....

★★★ 2. Answer these questions about the pattern in problem 1 above.

a. How many dots would it take to make the 10th figure in the pattern? _____

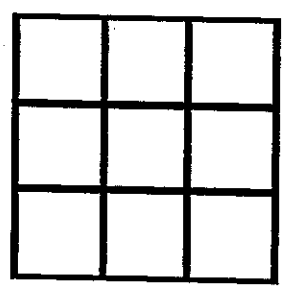
b. What is the number of the figure that is made with 401 dots? _____

c. Let *n* stand for any figure number. Use *n* to tell how many dots there would be in the *nth* figure. _____

★★ 3. Margo's dog had a litter of 7 pups, all alike except for coloring. The mother and one pup weighed 15 pounds. The mother and two pups weighed 17 pounds. How much did the litter of 7 pups weigh by themselves?

Answer: _____ pounds

★★★★ 4. In a Magic Square, the sums of the columns, rows and diagonals are all the same. Using the digits 1-9 only once, fill in the blanks to make this figure a magic square with a sum of 15.



★ 5. Back in the old days, couples would enter marathon dance contests to win money. They would dance continuously, with only short breaks for food and drink. Some contests would go on for over a week. How many hours of dancing would there be in a 7-day week?

Answer: _____ hours

★★★ 6. Mr. Trumpet would like to offer you a job. He will hire you for ten days. He will pay you one of three ways:

a. $1.00 the first day, $2.00 the second day, $3.00 the third day and so on.

b. 10¢ the first day, 20¢ the second day, 40¢ the third day, and each day twice the amount of the day before.

c. $6.00 each day for all ten days.

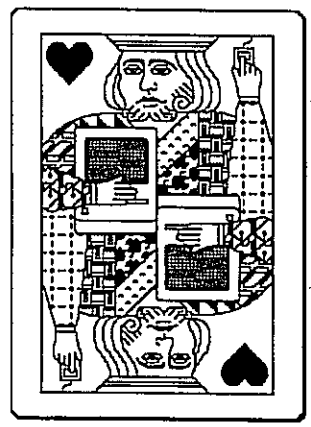
Which way would pay you the most money? Answer:_____

★ 7. How many gallon jugs would you need to hold 3 and $\frac{3}{4}$ gallons of lemonade?

Answer:_____jugs

★★★★ 8. Your Mom is a sporting person, so when it's close to your bedtime, she will have a contest with you to see if you get to stay up an extra half-hour to play a computer game. You get to draw a card from a well-shuffled deck. If you draw a face card, an ace, or any heart, she'll "have a heart" and let you stay up. If you draw any other card, you lose and go ahead to bed. Who has the best chance of winning, you or your Mom?

Answer: _____



SUNSHINE MATH - 4
Jupiter, XI

Name: _____

(This shows my own thinking.)

★★ 1. The corner of this paper measures 90 degrees. Fold the lower right-hand corner of this paper so it represents two 45 degree angles. Trace the fold line with your pencil.

★★ 2. Estimate the result of the following problem as a whole number.

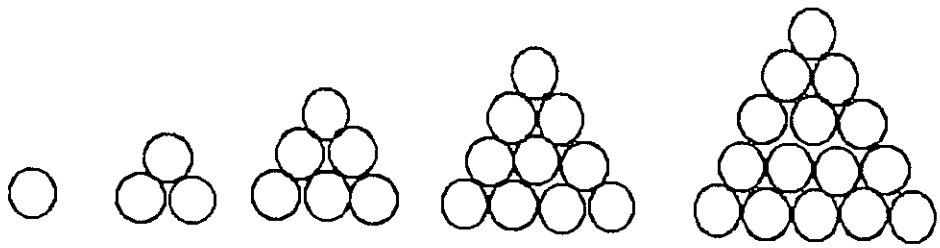
$$4\frac{1}{43} + 2\frac{15}{16} - 1\frac{24}{26} + 5\frac{11}{12} - 3\frac{3}{61}$$

Answer: _____

★★★ 3. How many ways can 3 students be arranged in three chairs?

Answer: _____ ways

★★ 4. Observe the circles in the triangle-shaped stacks. Fill in the missing numbers to show how many circles are in the last two stacks.



1 3 6 ___ ___

★★ 5. Draw the next figure in the above pattern.

★★★ 6. In the pattern for problem 4, how many circles would be in the 10th figure?

Answer:_____

★★★ 7. The Florida Lottery is made up of the numbers 1 - 49. My mother has observed that the winning numbers many times are prime numbers.

a. List the prime numbers from 1 - 49: _____

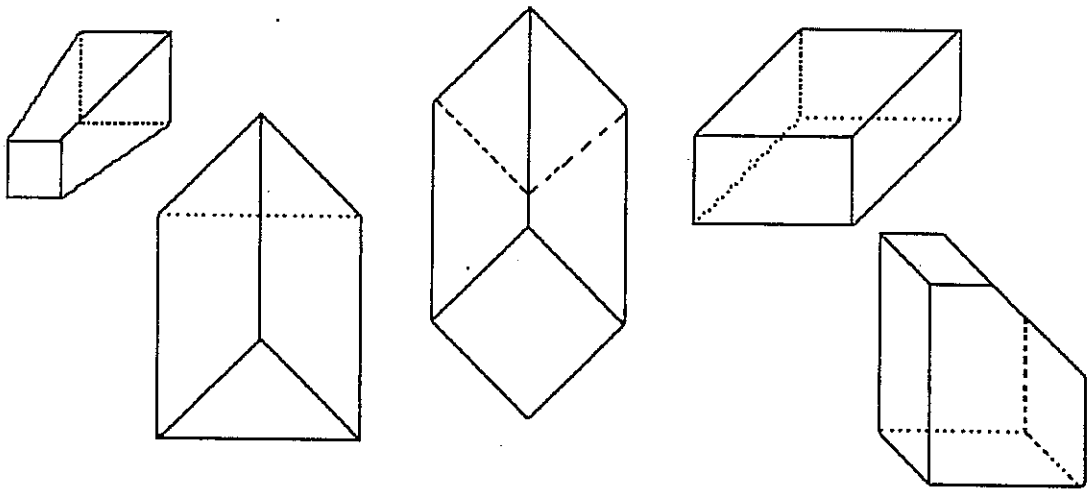
b. What is the probability of a prime number being picked randomly from the numbers 1 - 49? _____

c. Is the probability of picking a prime number greater than picking a number that is not prime? _____

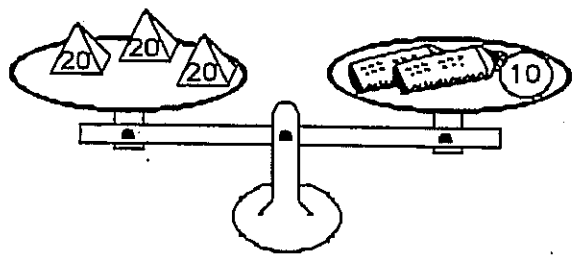
★★★ 8. Put <, >, or = in each blank below, to give true statements.

(a) 3030 _____ 3300 (b) (345 + 253) _____ 600 (c) 1.09 _____ 1.090

★★★ 9. Circle the following solid figures that have at least one square face.



★★ 10. Lu Win likes to balance things. She balanced three 20-gram weights with a 10-gram weight and two new tubes of glue. How much did each tube of glue weigh?



Answer: _____ grams

SUNSHINE MATH - 4
Jupiter, XII

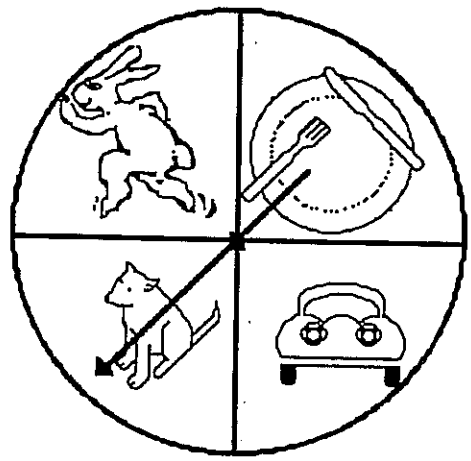
Name: _____

(This shows my own thinking.)

★★★ 1. A snail climbs up a wall 20 feet high. Each day the snail climbs 5 feet, but each night it slips backwards 4 feet. How many days will it take for the snail to get to the top of the wall?

Answer:_____days

★★ 2. Raoul got to spin this spinner, to see what chore he had to do Saturday mornings. He could wash the dishes, wash the car, wash the dog, or change the paper in the rabbit cage. What is the chance he will have to wash something Saturday morning, as a fraction and as a percent?



Answers: fraction: _____

percent: _____

★ 3. A costume shop had a special sale. Bob got his clown costume for $\frac{1}{2}$ off the marked price of $25. How much did the costume cost?

Answer: _____

★ 4. If today was October 11th, how many days would be left in the current year?

Answer:_____days

★★★ 5. What Number Am I ?

I am a three-digit number.
I am less than 200.
I am divisible by 12, and by 9.
My units digit is less than my tens digit.

Answer: _____

★★★ 6. Suppose that humans walk about 10,000 steps per day, on average.

a. Your average step is probably about 18 inches.
If so, how many ***inches*** per day do you walk?_____

b. How many ***feet*** per day do you walk? _____

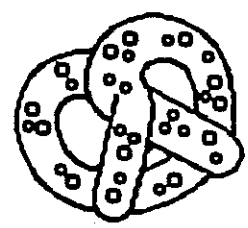
c. How many ***miles*** per day do you walk, to the nearest whole mile? _____

★★ 7. If you tend to be one of those people who taps their foot, picks their nails, drums their fingers, or moves around in their seat, there may be some good news. Although your fidgeting may be annoying to others, researchers at the National Institute of Health reports that one of these habits can burn as much as 800 calories per day. If you want to lose weight, this might help.

For someone who fidgets as above, how many calories per hour are burned up? Assume the person sleeps 8 hours per day, and doesn't fidget while asleep.

Answer: _____

★★★ 8. It costs Mr Kringle $10 to make 100 giant pretzels for his bakery. If he sells his pretzels for 25¢ each, how much profit will he make after selling all 100 pretzels?



Answer: $_____ profit

SUNSHINE MATH - 4
Jupiter, XIII

Name: _____

(This shows my own thinking.)

★★★★ 1. To win $1 million, you must draw two cards whose sum is nine, from a stack of cards numbered 1 through 10. After the first draw, you replace the card and shuffle the stack again for the second draw. What is the chance that your two cards will have a sum of nine?

Use the chart if it helps you think about the possibilities.

Answer: _____

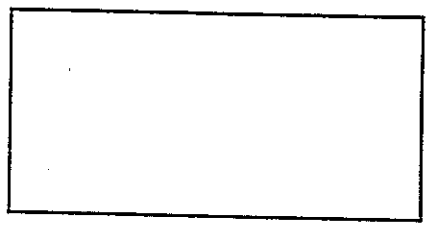
second card \ first card	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

★ 2. Joey agreed to help his mom with the summer chores for $1.50 a day for 20 days. Susan agreed to water the neighbor's indoor plants and feed the cat while they were on summer vacation for $5.00 a week for 5 weeks. Who made more money over their summer vacation,

Joey or Susan?

Answer: _____

★★ 3. It's time to plant a spring vegetable garden. $\frac{1}{3}$ will be root plants, $\frac{1}{3}$ will be stalk plants, and $\frac{1}{3}$ will be vine plants. $\frac{1}{2}$ of the stalk and vine plants will be grown organically without fertilizer. What fraction of the garden will be grown organically? Fill in the rectangle to show how the garden can be set up.



Answer: ____ will be grown organically.

★ 4. Juanita has 35 pre-addressed post cards she plans to hand out to her friends so they will write to her while she is away visiting her grandmother. She has 7 friends she'd like to give them to. Write a number sentence to show how Juanita can share her cards equally among her friends.

Answer: _____

★★ 5. Mary Jane called UPS to find a cost estimate for shipping her racing bicycle from Florida to her sister's house in Vermont.

a. The first information requested by the UPS agent was for the dimensions of the bike. Circle the most reasonable answer.

(a) 14 inches by 6 inches (b) 14 feet by 6 feet

(c) 5 feet by 4 feet (d) 5 yards by 3 yards

b. The second question the agent asked was the approximate weight of the racing bike. Circle the most reasonable answer.

(a) 300 grams (b) 15 kilograms (c) 1 metric ton (d) 225 kilograms

★★★ 6. Felicia collected data from her classmates using a tally sheet. She asked each student what types of electronic appliances they had at home. Below is the data Felicia collected and recorded on a pictograph. Answer the questions related to the graph.

(a) How many different types of appliances are listed? _____

(b) What is the total number of all electronic appliances listed? _____

(c) According to the data collected, what are the three most popular electronic appliances?

Answer: _____, _____, _____

ELECTRONIC APPLIANCES AT HOME

ITEM	NUMBER FOUND
Hairdryer	💡💡💡
Television	💡💡💡💡
Washing Machine	💡💡💡
Computer	💡
Food Processor	💡
Clock Radio	💡💡
Stereo	💡💡💡
Walkman	💡💡💡💡
Lamps	💡💡💡💡💡

💡 = 4 APPLIANCES

★★ 7. Write in the three missing numbers in the pattern.

....., _____, _____, 171, 162, 153, 144, 135, 126, _____, ...

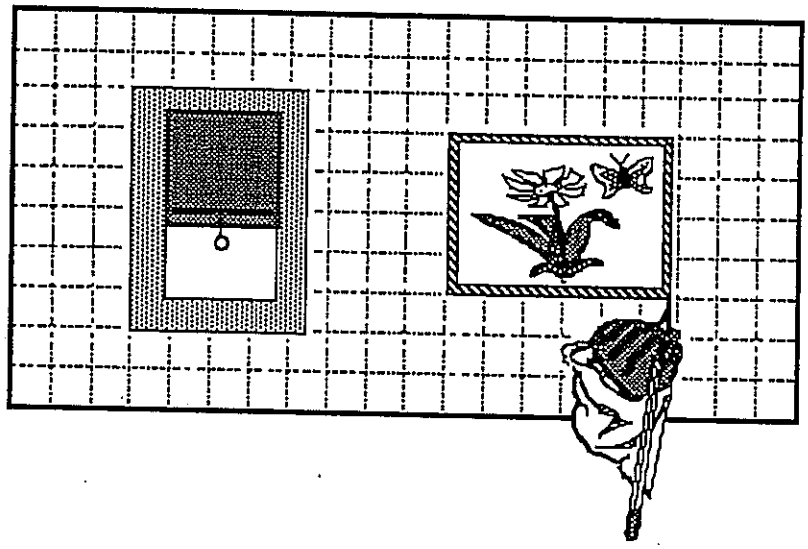
SUNSHINE MATH - 4
Jupiter, XIV

Name: _____

(This shows my own thinking.)

★★ 1. Charles likes to draw and thinks he will become an architect one day. He is always concerned about the size of the objects he draws. Charles said the areas of the window and picture below were about 27 square units and $23\frac{1}{5}$ square units, respectively. Was he correct? Why or why not?

Answer: _____



★★★ 2. Farmer Brown had some animals. One-fourth were horses, one-half were cows, and the rest were pigs. He had 8 pigs. How many animals did he have altogether?

Answer: _____

★★★ 3. To change a Fahrenheit temperature to a Celsius temperature, follow these steps:

- *Subtract 32 from the Fahrenheit temperature.*
- *Divide by 9.*
- *Multiply by 5.*

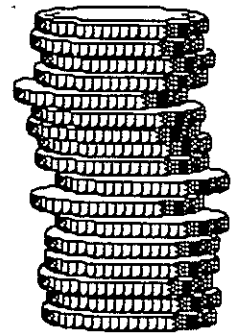
Use the steps to write the Celsius temperature for each of these Fahrenheit readings:

a. 59°F is _____ °C b. 86°F is _____ °C c. 122°F is _____ °C

★★ 4. Marilyn used the steps above, and got a Celsius temperature of 60°. What was the Fahrenheit temperature she started with? _____

★ 5. How much is this stack of quarters worth?

Answer: _____



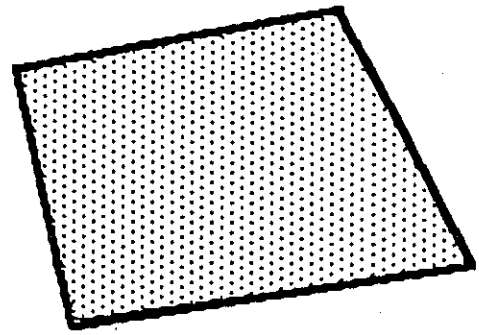
★★ 6. The Adams family wants to take a trip to Disneyworld, but can't decide what month to go. They decide to write the names of the months on 12 pieces of paper and put them in a hat. They will draw one piece of paper without looking -- that is the month they will travel.

a. What is the chance they will go during the summer months of June, July or August? _____

b. What is the chance they will go during the school year, September through May? ____

★★ 7. Shown to the right is the way 1 square inch of a newspaper would look, when enlarged so you can see the tiny dots. About how many dots are there per square inch, in a newspaper? Circle the best choice.

a. 100 b. 500 c. 1000 d. 1500



★★★★ 8. Consider each of the following. Can the equation 6 x 3 + 4 = 22 represent any of these statements? Circle "yes" or "no" beside each statement below.

yes *no* a. Six tickets at $3 each plus a $4 ticket costs $22.

yes *no* b. Six $3 lunches and a $4 tip come to $22.

yes *no* c. A bike trip of 6 miles in 3 weeks, and 4 more weeks, is 22 miles.

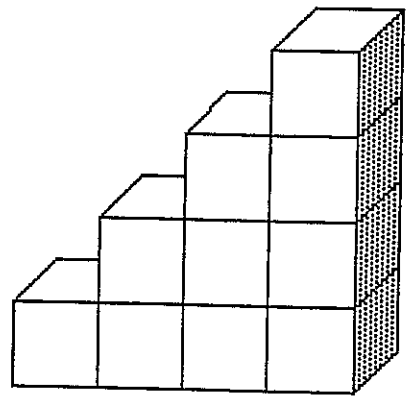
yes *no* d. Six 3-k races, plus a 4-k race, means he ran 22 kilometers that month.

SUNSHINE MATH - 4
Jupiter, XV

Name: _____

(This shows my own thinking.)

★★★★ 1. You have been asked to paint the outside surface of this figure made of cubes glued together. It will take approximately one pint of paint per square face. You do not have to paint the bottom.



a. How many pints of paint will you need?____

b. If the paint costs $4.99 per pint, estimate the cost of the paint to the nearest dollar. ____

★★ 2. In the space to the right draw a quadrilateral with only one pair of parallel sides.

The name of this quadrilateral is a: _____

★★ 3. Ricardo bought one-half dozen donuts for his family. Family members ate one-half of the donuts. How many were left for Ricardo to eat?

Answer: _____donuts

★★ 4. A commercial says "Four out of five dentists surveyed chose sugarless gum for their patients." If 1000 dentists were surveyed, how many recommended sugarless gum?

Answer: _____

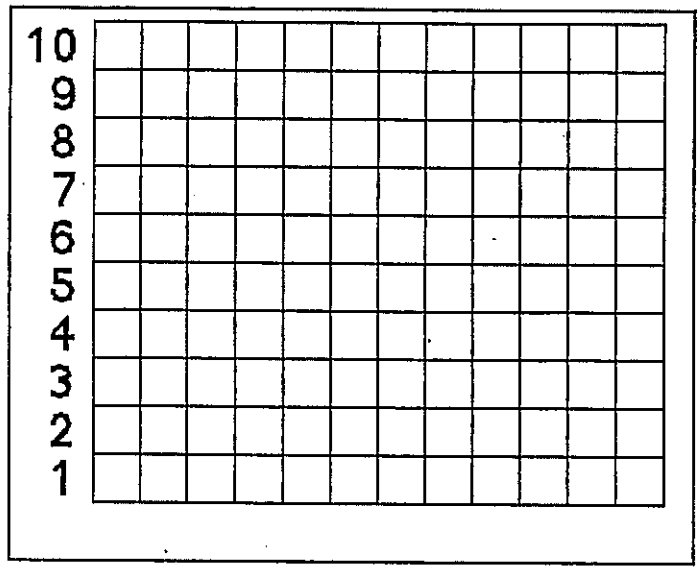
★★ 5. What number from 1 to 25 has the most factors? _____

List its factors: _____

★★ 6. Fill in the bar graph below with the data given. Write a title and label the bottom axis.

Antonio surveyed his 36 classmates to find the month of their birthdays. He tallied: 5 in January, 4 in February, 1 in March, 2 in April, 1 in May, 4 in June, 4 in July, 2 in August, 3 in September, 4 in October, 0 in November, and 6 in December.

TITLE: _____

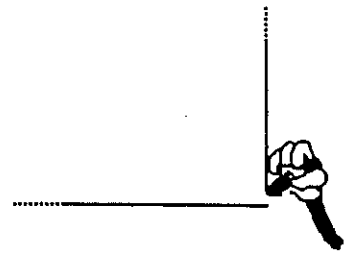


★★ 7. A skating rink plays different songs during a two-hour skating party. The songs average 3 minutes each. There is a 15-minute break, without music, when the refreshments are served. How many songs do they need to have ready?

Answer: _____ songs

★★ 8. A pencil can draw a line 36 miles long, according to research. Mickey decided to test that theory and draw his 36 miles in the shape of a square, so he would wind up back where he started. How long would each side of the square be?

Answer: _____ miles

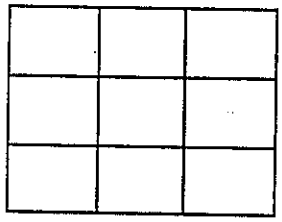


SUNSHINE MATH - 4
Jupiter, XVI

Name: _____

(This shows my own thinking.)

★★ 1. Shade part of the diagram below to show $\frac{1}{3}$ of $\frac{1}{3}$ of the whole rectangle.



★★★★ 2. The table below lists mid-season baseball won-loss records for the Central division of the National League. Answer the questions based on the information provided in the table.

CENTRAL	W	L	TOTAL GAMES
St. Louis	31	40	
Cincinnati	43	25	
Houston	38	31	
Chicago	37	33	
Pittsburgh	30	37	

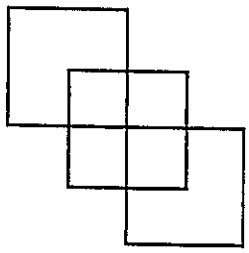
a. Fill in the total games column on the table for each team.

b. Which team has the highest winning percentage? _____

c. Which team has the lowest winning percentage? _____

d. What is the average number of games played per team? _____

★ 3. How many squares?

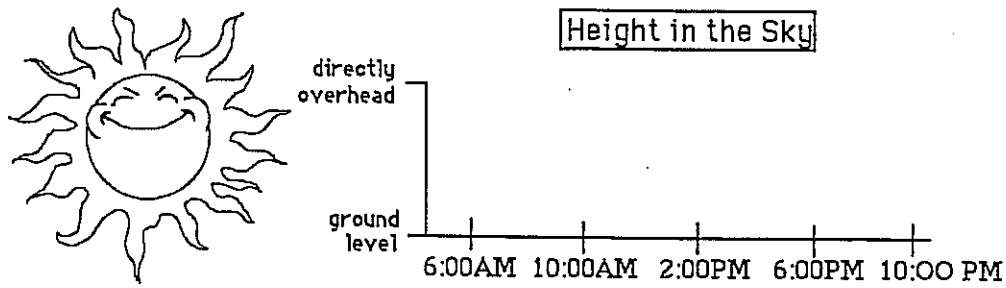


Answer: _____ squares

★★★ 4. The Fashion Store is having a Spring sale. The dresses are $\frac{1}{2}$ off and the shoes are $\frac{1}{4}$ off the regular price. Sandy buys a dress that was regularly priced at \$94.50 and shoes to go with the dress that were regularly priced \$29.96. What was the total amount she spent on just these two items?

Answer: _____

★★ 5. Make a line graph to show the approximate position of the sun during a sunny summer day. The sun rises at 6:00 AM and sets at 9:00 PM.



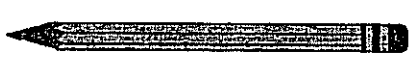
★★ 6. Ken is about to eat a bag of M&M's on the 4th of July. The number of each color M&M is listed in the table below. Answer the questions.

green	**11**
red	**8**
yellow	**13**
tan	**7**
brown	**10**
blue	**5**

a. If Ken picks the first M&M out of the bag without looking, what is the chance he will pick a brown one to match his eyes? _____

b. What is the chance his first one will match a color in the American flag? _____

★★ 7. Mike needs to buy 4 packages of pencils at 89¢ each, 2 packages of paper at \$1.19 each, and an eraser package for 95¢. He has \$10.00. Estimate to the nearest dollar how much money he will have left.



Answer: _____

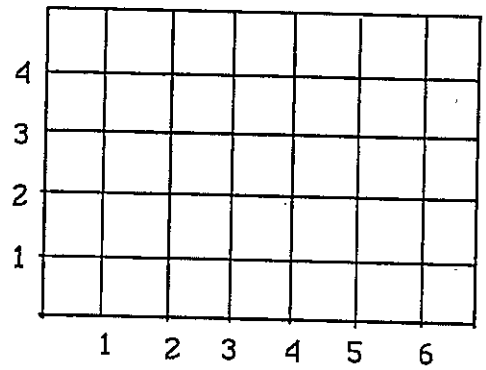
SUNSHINE MATH - 4
Jupiter, XVII

Name: _____

(This shows my own thinking.)

★★★ 1. Make big dots on the grid for the following ordered pairs, and label them A, B, C, or D.

A is (2,4); B is (6,4); C is (6,1); D is (2,1)



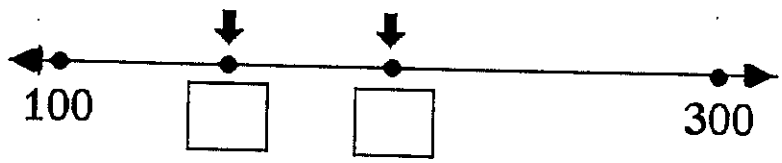
a. Connect A to B to C to D to A with a heavy pencil line.

b. Name the shape you drew. _____

c. Give the *area* of the shape in square units.

_____sq. units

★★ 2. Write in the boxes the numbers to show the arrows' positions on the number line.



★★★ 3. The *Guinness Book of World Records* states that the largest pumpkin on record weighed 671 pounds. If this pumpkin was lifted onto the scales by 11 fourth graders, on average, how much would each student be lifting?

Answer: _____ pounds

★★★ 4. The computer tables in a classroom were placed together to form the polygon pictured to the right.

a. Name the polygon that was formed. _____

b. How many angles does this polygon have? _____ angles

c. Are the angles ***acute***, ***obtuse***, or ***right***? _____

★★ 5. In the United States, every 57 minutes an underage drinker is involved in a traffic fatality. A recent report urges a crackdown on teen-age drinking and driving. Estimate the number of underage drinkers involved in traffic fatalities each day.

Answer: _____

★ 6. Decide if an estimate or a precise calculation is appropriate for each situation. Write "estimate" or "precise calculation" in the answer spaces. Use each term once.

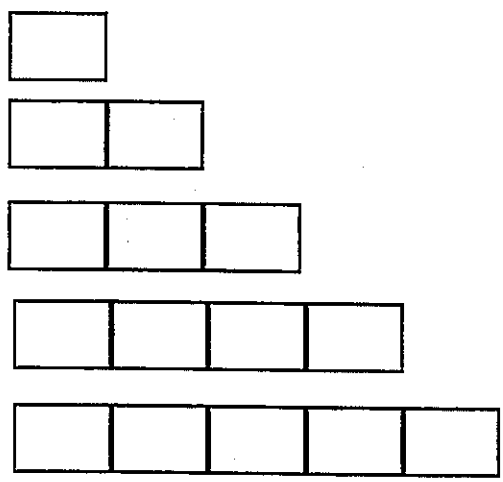
Situation 1: *Checking the change you receive after paying for lunch.*

Answer: _____

Situation 2: *Planning the time it will take to travel from one town to another on a trip.*

Answer: _____

★★★★ 7. Fill in the total number of rectangles found in each pattern below.

PATTERN	NUMBER OF RECTANGLES
	_____ _____ 6 _____ _____ _____

★★★ 8. Describe how to find each "next number" of rectangles, without drawing the figure:

Answer: _____

★★ 9. How many total rectangles will there be if 7 small rectangles are used in the pattern?

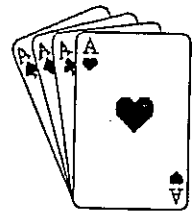
Answer: _____

SUNSHINE MATH - 4
Jupiter, XVIII

Name: _____

(This shows my own thinking.)

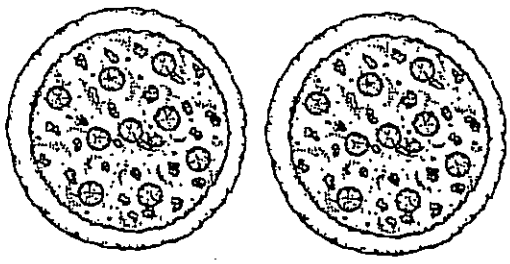
★★★★ 1. You are playing a card game with a full deck of 52 cards. You win if you draw a *red card* that is a *multiple of 5*. What are your chances of winning on your first draw?



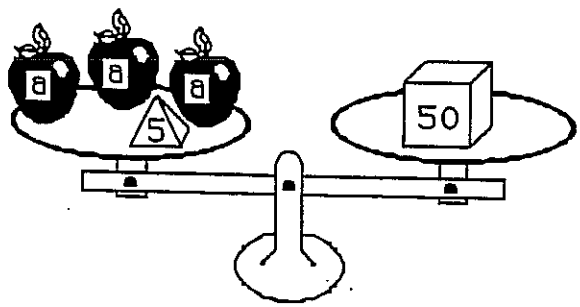
Answer: _____

★★★ 2. The Tappens ordered two pizzas for dinner Friday. Dad ate $\frac{3}{4}$ of one pizza, Jenny ate $\frac{1}{8}$ of a pizza, Danny ate $\frac{1}{4}$ of a pizza, and Mom ate $\frac{1}{2}$ of a pizza. What fraction of a pizza was left for a midnight snack?

Answer: _____ of a pizza



★★★ 3. Leah liked to balance objects she found around the house using the science kit she got for Christmas. She found that 3 identical apples and a 5-gram weight exactly balanced a 50-gram weight. Leah said she could tell how much each apple weighed by solving the equation $3a + 5 = 50$. Prove Leah was correct by finding the weight of 1 apple.

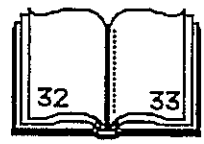


Answer: a = ____

★ 4. Apalachee Elementary School has a total of 16 classes. There are 104 fourth graders, divided equally among 4 classrooms. How many fourth graders are in each class?

Answer: _____

★ 5. If one or both of the numbers in a multiplication problem are *even*, the product will be *even*. Therefore if you open a book and multiply the facing page numbers together, the product will be an *even* or *odd* number?



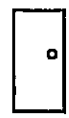
Answer: _____

★★ 6. Tonya is making friendship bracelets for each girl coming to her sleep-over party. Each bracelet will be braided with 4 purple strings, 3 yellow strings, 2 green strings and 3 blue strings. She is expecting 8 friends to attend her party. Each string costs 10 cents. It takes Tonya about 20 minutes to braid each bracelet.

a. How much will the string cost Tonya? _____

b. How long will it take Tonya to make all the bracelets ? ____ hours and ____ minutes

★ 7. About how long is it around the outside edge of an ordinary door in your home? Circle the best answer below.



(a) 10 meters (b) 4 meters (c) 15 meters (d) 6 meters

★★ 8. Below is a bus schedule showing departure times and arrival times from various cities in Florida to Ft. Lauderdale. How much time does the longest trip take?

DEPARTURES		ARRIVALS	
Jacksonville	8:30 AM	Ft. Lauderdale	3:00 PM
Tallahassee	7:30 AM	Ft. Lauderdale	7:00 PM
Tampa	10:00 AM	Ft. Lauderdale	3:00 PM
St. Augustine	8:00 PM	Ft. Lauderdale	4:00 AM

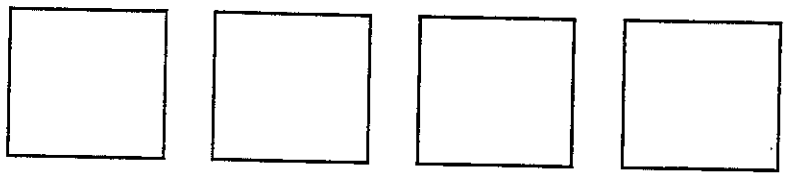
Answer: _____ hours and _____ minutes

SUNSHINE MATH - 4
Jupiter, XIX

Name: _____

(This shows my own thinking.)

★★ 1. Divide each of the squares below differently so they represent fourths.



★ 2. Tiger roared every time someone passed its home in the zoo. Tiger roared more than 39 times but fewer than 46. It roared an odd number of times. You say the number when you count by 3's and by 5's. How many times did Tiger roar?

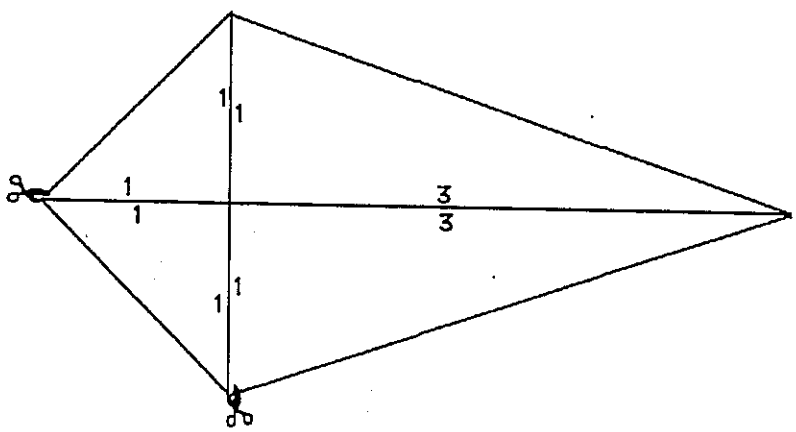
Answer: _____ times

★★ 3. Paul Lynch holds the world record for one-arm push-ups. Paul once did 3,855 one-arm push-ups in five hours. On average, how many did he do in 1 hour?

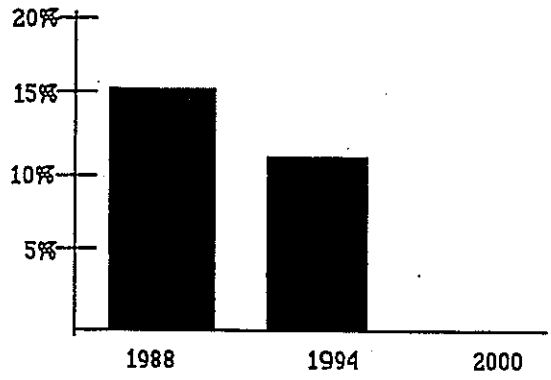
Answer: _____ push-ups

★★ 4. Trace over the figure of the kite below. Cut along the lines of your tracing that go from vertex to vertex so you have four triangles. Arrange these triangles so they make two quadrilaterals: a square and a rectangle. Find the perimeter of each quadrilateral.

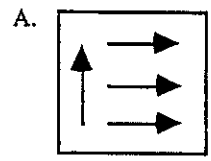
Perimeter of the square: _____ Perimeter of the rectangle: _____

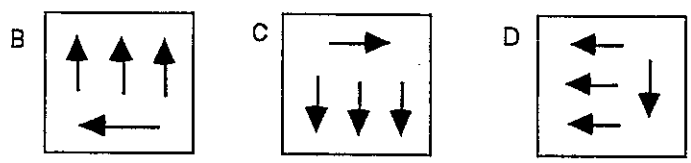


★★ 5. The bar graph shows the percent of women who were members of elected parliaments or legislatures in 1988 and 1994. Fill in the graph to show the percent in the year 2000, if the decline is the same from 1994 to 2000 as it was from 1988 to 1994.



★★ 6. Circle the figure below -- B, C, or D -- that shows figure A rotated 270 degrees clockwise.

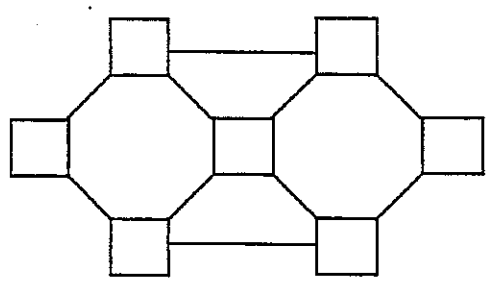




★★ 7. During the last week of school, a few students got the silly willies on Monday. On Tuesday, 2 more students than on Monday caught the silly willies. Each day after that, 2 more students than on the day before caught them. On Friday, 12 students caught them. How many students caught the silly willies in 5 days?

Answer: _____ students

★★ 8. Arrange the digits 1-7 in the squares so that no two consecutive digits are connected by a line.



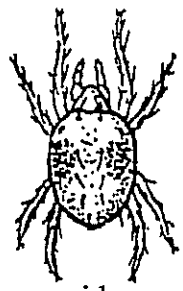
SUNSHINE MATH - 4
Jupiter, XX

Name: _____

(This shows my own thinking.)

★★★★ 1. The owner of "Pets On The Go" pet store currently has the following animals in his store: 5 dogs, 4 cats, 12 birds, 2 turtles, 3 snakes, 2 giant lizards, 1 pot-bellied pig, and 4 spiders . How many legs were on the 33 animals?

Answer: _____ legs



spider

★★ 2. Mrs. Rickets is a farmer. She grows fruits and vegetables. The largest pumpkin she has ever grown weighed 68 pounds. The largest cantaloupe she has ever grown weighed 12 pounds, 8 ounces. What is the difference in weight between the pumpkin and the cantaloupe?

Answer: _____ pounds, _____ ounces

★★★ 3. If a customer wanted to buy Mrs. Ricket's largest canteloupe and the price was 50¢ per pound, how much would the customer have to pay?

Answer:_____

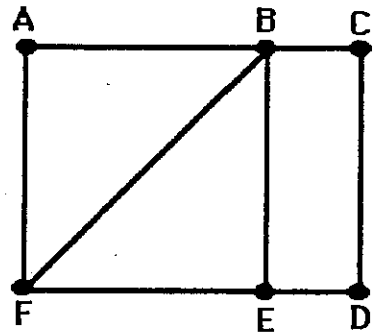
★ 4. Mark hid a $10 bill inside his favorite book. He forgot the pages where he hid it. If the sum of the pages where the bill is hidden is 177, on what pages will Mark find his money?

Answer: page _____ and page _____

★ 5. Mr. Dexter brought home $\frac{1}{2}$ dozen eggs. He accidently dropped the carton on the floor and $\frac{1}{3}$ of the eggs broke. How many eggs does he have left?

Answer: _____ eggs

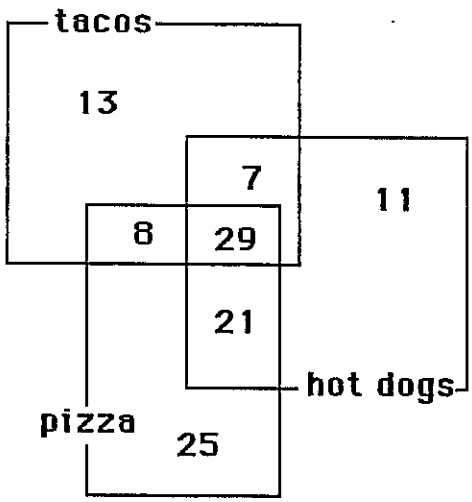
★★ 6. If you start in the right place, you can trace this entire map with your pencil without retracing a path between two points. Circle the two points where you can start to do this amazing feat!



★★ 7. The 6 fourth-grade classes at Marathon Elementary School are having a kick-ball tournament. Each class must play each other once in the tournament. How many kick-ball games must be scheduled?

Answer: _____ games

★★★ 8. The cafeteria staff at Fairlawn Elementary took a poll of its fourth grade students to find out how many students liked hot dogs, pizza, or tacos. The results are shown in the Venn diagram below.



a. Sixty-eight students liked hot dogs. How many students like tacos? _____ students

b. How many students liked both pizza and tacos, but not hot dogs? _____ students

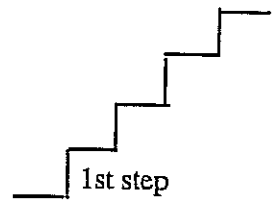
c. How many students liked all three types of food? _____ students

SUNSHINE MATH - 4
Jupiter, XXI

Name: _____

(This shows my own thinking.)

★★★ 1. A cricket and a flea decided to hop on a set of stairs. The flea takes 2 steps in 1 hop. The cricket takes 3 steps in 1 hop. The set of stairs has 12 steps.



a. On which steps will both the cricket and the flea land?

Answer: _____

b. On which steps will neither of them land?

Answer: _____

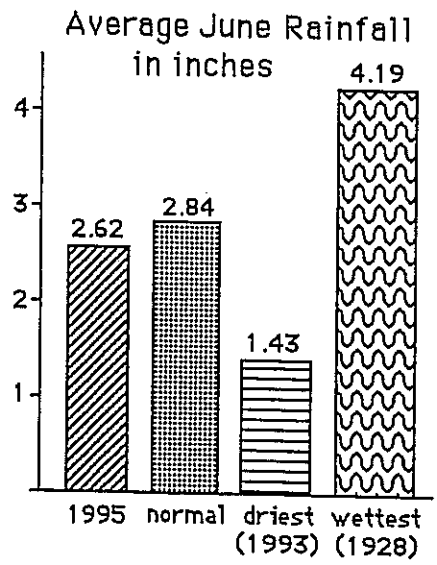
★★ 2. Bill Cosby is one of the leading money makers in the entertainment business. If he earns $92 million for two years' work, how much would he earn for five years' work?

Answer: $_____ million

★ 3. The answer to problem 2 uses a short word name for a large number. Rewrite the answer to problem 2, but do not use "million." Remember -- this answer involves money!

Answer: _____

★★★ 4. Study the bar graph which shows the average precipitation for the month of June in the United States. Answer the questions pertaining to the graph.



a. Was June 1995 drier or wetter than normal?

Answer: _____

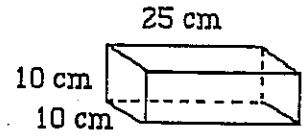
b. What is the difference in rainfall between the wettest and driest Junes on record?

Answer: _____ inches

c. How many years' difference exists between June 1995 and the wettest June on record?

Answer: _____ years

★★★ 5. A bricklayer is working with bricks of the size shown to the right. She puts a 2-cm layer of mortar between each row of bricks. How high will the wall be when 10 rows have been laid?



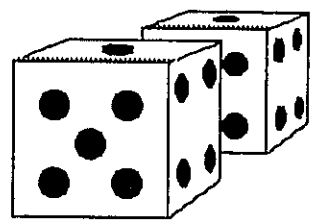
Answer: _____ cm

★ 6. It is recommended that children from ages 7 to 10 eat about 2000 calories per day. Andy is 8 years old. Listed below is everything Andy ate Tuesday. Did Andy eat less than, more than, or equal to the recommended amount of calories?

Breakfast	**Lunch**	**Snack**	**Dinner**
cereal (240 cal.)	Egg-salad sandwich (230 cal.)	cheese (114 cal.)	lasagna(330 cal.)
milk (225 cal.)	applesauce (53 cal.)	crackers (20 cal.)	milk (150 cal.)
banana (100 cal.)	milk (150 call.)	yogurt (180 cal.)	pear (90 cal.)
	potato chips (105 cal.)		ice cream (230 cal.)

Answer: _____

★★ 7. You can roll two dice at a time, a white one and a red one, and there are 36 different ways for the "up faces" to land. The pair of dice to the right show the only way that a sum of two can come up. How many of ways will give a sum of 7 on the two up faces?



Answer: _____ ways

★★★ 8. About how many people lying head-to-toe are needed to stretch around the earth? Is it closest to: (a) 1 million, (b) 25 million, or (c) 100 million? (Hint: The distance around the earth is approximately 25,000 miles.)

Answer: _____

SUNSHINE MATH - 4
Jupiter, XXII

Name: _____

(This shows my own thinking.)

★★ 1. If the 24th day of the month falls on Saturday, on what day did the 6th fall?

Answer: _____

★★★ 2. There are 4 six-packs of soda in a case. Chris bought $\frac{1}{2}$ of a case and gave $\frac{1}{3}$ of what he had to Dana. How many cans of soda does Chris have left?

Answer:_____cans

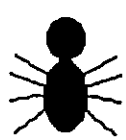
★★★ 3. Together, 6 boys and 12 girls weigh 1050 pounds. The boys all weigh the same, x pounds. Each girl weighs 55 pounds. What is the weight of one boy?

Answer: x = _____ pounds

★★ 4. The sum of 3 consecutive numbers is 276. What are the numbers?
(*Consecutive numbers* differ by one: example: 8, 9, and 10)

Answer:_____, _____, and _____

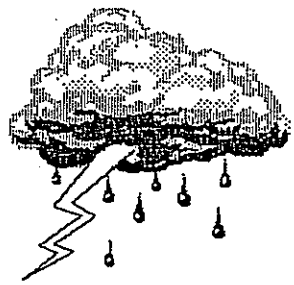
★★ 5. If a family of 12 spiders wore shoes, how many *pairs* of shoes would they need?



Answer:_____pairs.

★★ 6. A tropical storm passed through the town. It began to rain Monday morning at 8:45 AM and did not stop until the next day at 2:30 PM. How long did it rain?

Answer: _____ hours and _____ minutes



★★ 7. There are 3 cars, 4 bicycles, 2 tricycles, and 1 unicycle in the neighbor's garage. How many wheels are there in all? Forget about any "spare tires"!

Answer: _____ wheels

★★ 8. Rosemary bought a sweater on sale for $6.98. She also bought a skirt for $9.99. She paid an additional $1.19 for sales tax. Rosemary gave the sales person a $20 bill. How much change should she receive?

Answer: _____

★★★ 9. Study this pattern. 25 and also 32 would be in column E, if the pattern continued.

a. In which column would 100 appear? _____

b. In which column would 500 appear? _____

c. In which column would 1000 appear? _____

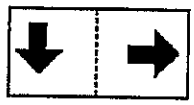
.	.	.	.	.	.	.
21	22	.	.	.	.	.
14	15	16	17	18	19	20
7	8	9	10	11	12	13
0	1	2	3	4	5	6
A	B	C	D	E	F	G

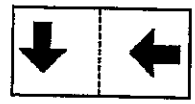
SUNSHINE MATH - 4
Jupiter, XXIII

Name: _____

(This shows my own thinking.)

★★ 1. The design to the right was drawn on a piece of clear plastic. The plastic was turned 180° clockwise, which is half of a complete rotation. It was then flipped over on the dotted line. Circle the picture below that shows how the design looks after these movements.





★ 2. If the heaviest dog in the world is 310 pounds and the next-heaviest is 14 pounds less, how much does the next-heaviest dog weigh?

Answer: _____ pounds

★★ 3. Sunae's group of close friends are going to fifth grade in September. All are going to Belleview Elementary and their homerooms will be rooms 12, 14, or 16. All of her friends but 4 are going to room 12, all but 4 are going to room 14, and all but 4 are going to room 16. Not counting Sunae, how many children are in her group of close friends?

Answer: _____ friends

★★★ 4. Sam and Suzie are twins. Sam has as many brothers as he has sisters -- Suzie has at least 1 sister, and twice as many brothers as sisters. How many kids are in the family altogether ?

Answer: _____ kids

★★ 5. Josh bought a shirt for $12.95, a belt for $6.95, and a pair of jeans for $27.97. The tax came to $3.35. How much change did he receive if he gave the clerk 2 twenty-dollar bills and 2 ten-dollar bills?

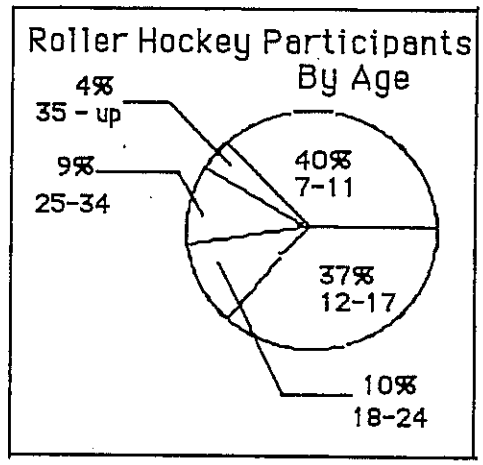
Answer: $ _____

★★★ 6. Danny's age is 13 and his favorite sport is roller hockey. Answer the questions about roller hockey participants using the circle graph below.

a. How many ages are included in Danny's age group? _____.

b. List the age groups from greatest to least based upon their percent of participation.

Age Group	% Participation
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____



c. Use the data from part (b) to make a conclusion about participation in roller hockey as you get older:

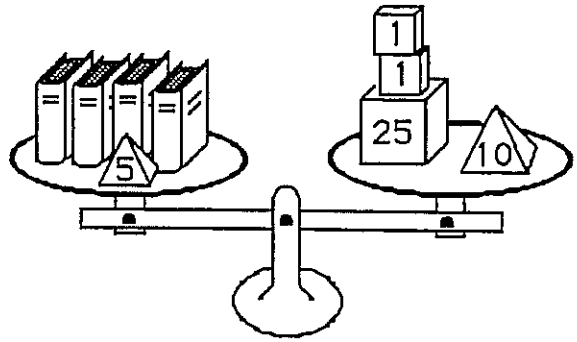
Answer: _____

★★ 7. What number am I? Answer: _____

I am even.
I am not 7 x 10 or less.
I am not a multiple of 4.
I am not a multiple of 3.
I am less than 10 x 10 - 20.

★★★★ 8. Four identical books and a 5-ounce weight balance 37 ounces. The equation $4x + 5 = 37$ expresses this situation, where x is the weight of 1 book. How much does 1 book weigh?

Answer: $x =$ _____ ounces



SUNSHINE MATH - 4
Jupiter, XXIV

Name: _____

(This shows my own thinking.)

★★★ 1. The Daily News costs $0.35 at the news stand and is published Monday through Friday. You can also buy a four-week subscription for $4.75. If you bought a four-week subscription, how much would you save over buying it for four weeks at the daily rate?

Answer:_____

★★★ 2. Put > or < in the box.

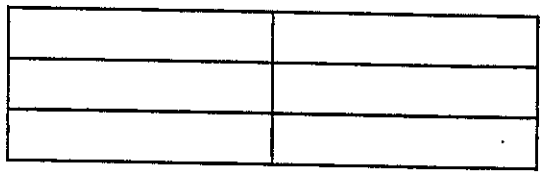
$$\frac{1}{2} + \frac{3}{4} \quad \square \quad \frac{2}{3} + \frac{1}{2}$$

★★ 3. If you drink 1 can of soda each day, about how many milliliters would you drink in one year? (A can of soda is 354mL. Round your answer to the nearest ten thousand mL.)

Answer:_____ mL

★★★ 4. There are 6 rectangles formed by the lines in this figure:

How many rectangles are formed by the lines this figure?



Answer:_____rectangles

★★ 5.

4 weeks	3 days	13 hours	21 minutes
- 2 weeks	6 days	19 hours	31 minutes

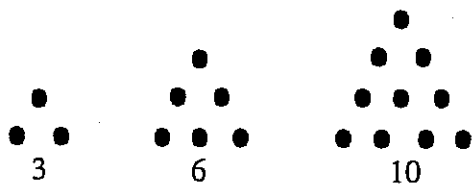
★★★ 6. Which pair of numbers, whose sum is 35, have the largest product?

Answer:_____

★★ 7. Fill in the missing letter of the alphabet in this pattern:

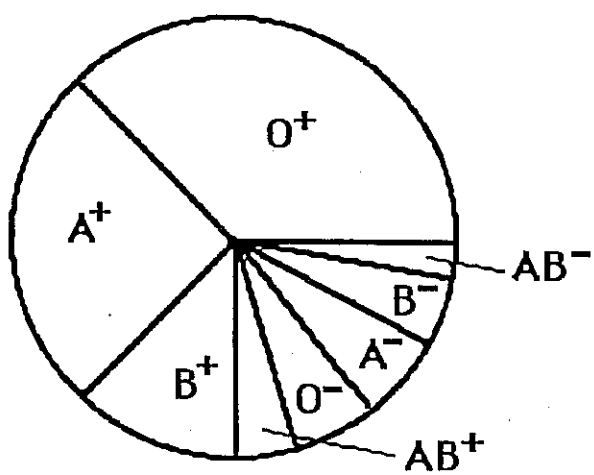
M V E M J S U N ____

★★★★ 8. Here are the first three triangle numbers: 3, 6, and 10.



What are the next four triangle numbers? Answers: ____, ____, ____, ____

★★★ 9. Everybody in the world has one of the eight blood types shown in the circle graph. The size of the region gives you an idea of the percent of people in the world with that type of blood. O^+ (read "oh positive") occurs more often than any other blood type -- 36% of the people in the world have O^+ blood. Answer the questions below.



a. About what percent have A^+ blood? ____

b. What is the most rare blood type? ____

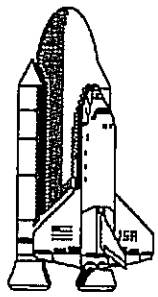
c. If a person in your school were picked at random, would they be more likely to have AB^+ or O^- blood? _____

SUNSHINE MATH - 4
Jupiter, XXV

Name: _____

(This shows my own thinking.)

★★ 1. When the Space Shuttle lifts off, it has moved 3 km by the time you clap your hands once. By the time you clap twice, the Shuttle has moved 9 km. By the 3rd clap, it has moved 27 km, and by 4 claps and it has moved 81 km. If this pattern continues, how many km has it moved by the time you have clapped 10 times?

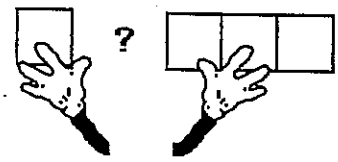


Answer: _____ km

★ 2. Maria needed some magazine pictures for a social studies project. She cut out pages 20, 21, 47, 48, and 104. How many sheets of paper did she remove from the magazine?

Answer: _____

★★★ 3. Draw three different ways to put four square tiles together. Each tile must be connected to at least one other tile along an entire side. What is the perimeter of each arrangement? What is the area of each arrangement?



Drawing 1

perimeter: _____

area: _____ **sq units**

Drawing 2

perimeter: _____

area: _____ **sq units**

Drawing 3

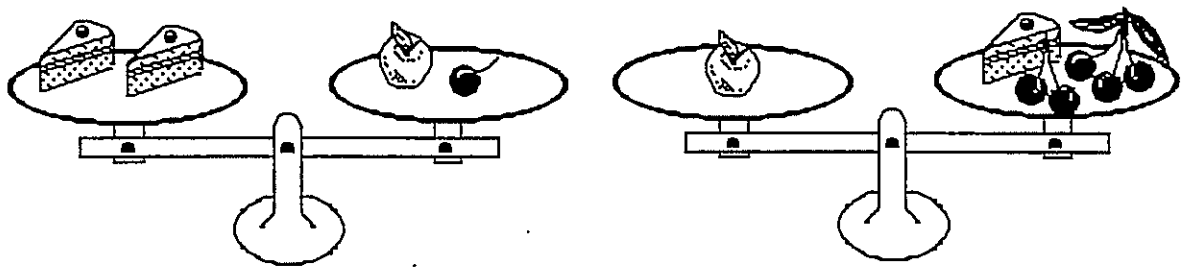
perimeter: _____

area: _____ **sq units**

★★ 4. Ms. Croskey just put her students in groups of three. Tia, Jonathon, and Courtney are in a group together and are arguing over who is going to sit by whom. How many ways can the three students be arranged in the chairs?

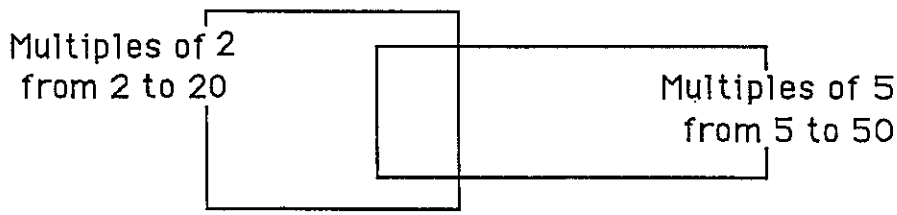
Answer: _____ ways

★★★ 5. Two pieces of cake weigh as much as one apple and one cherry. One apple weighs as much as five cherries and one piece of cake. How many cherries weigh as much as one apple?



Answer: ____ cherries = 1 apple

★★ 6. Fill in the Venn Diagram to represent the data provided.



★★ 7. Find two numbers that add to 19 and multiply to 84.

Answer: _____ and _____

★★★ 8. Shirley 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 Shirley's coins?

Answer: _____