Name _____

MathStars

a problem solving newsletter

Vol. 2 No. 1

★★ 1. Here is part of the number line. Place the following numbers where they belong: 33, 31, 37, 28.

<---|---|---|---|---|---|---|---|---|---|---|---|---|--->

★ 2. Put in + or - to make this statement true:

$3 \square 4 \square 2 \square 5 = 10$

★★ 3. Complete this pattern:

2 ---> 4
4 ---> 6
6 ---> 8
8 ---> _____
10 ---> _____

★★★ 4. Kristin wishes to bake some cakes. Each cake requires four eggs. How many cakes can Kristin bake if she has one dozen eggs?

★★★ 5. Twenty-eight is a two-digit number whose digit sum is 10. [2 + 8 = 10] How many other two-digit numbers have a digit sum of ten?

_____

What are the numbers?

Strategy of the Month

Someone said, "A picture is worth a thousand words." Turning the words of a problem into a picture or a diagram can help you "see" the problem. By using the part of your brain that visualizes a situation or object, you may see relationships or information that helps you solve the problem. When someone tells you a story, try turning the words into a motion picture or a cartoon. When reading a description, try "seeing it in your mind's eye." If you can do these things, this strategy may be for you! Try using a picture or make a diagram to solve this problem:

In the playground there are three bicycles and four tricycles. How many wheels are there?

MathStars Home Hints

Every year you grow and change in many different ways. Get someone to help you measure and record these data about yourself. Be sure to save the information because we will measure again in two months!

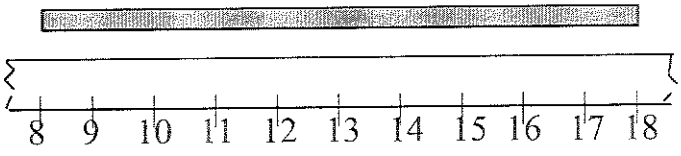
How tall are you? _____

How much do you weigh? _____

What is the circumference of your head?

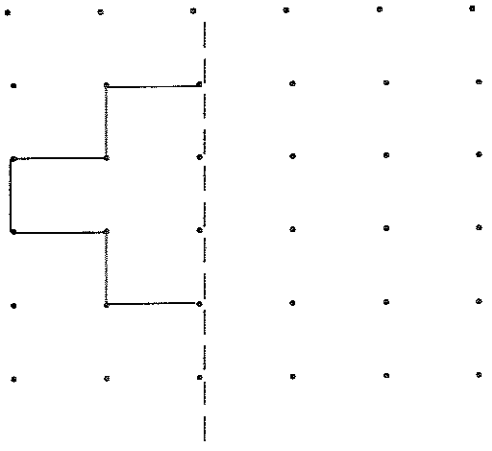
_____

★★ 6. Pat's Mom asked her to measure some ribbon. The only ruler she could find was broken. Pat says she can still measure the ribbon.



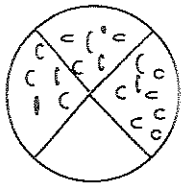
How long is the ribbon?

★★ 7. This is half of a symmetrical figure. Draw the other half.

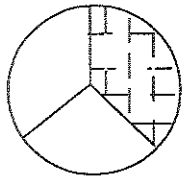


★★★ 8. Look at the shaded parts of each circle.

Which ones are less than half shaded?



A



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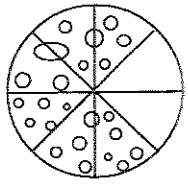

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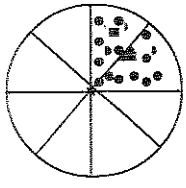


D

Setting Personal Goals

Problem solving is what you do when you don't know what to do. Being a good problem solver will help you be ready to live and work in our changing world. Computers can do computations but people must tell the computers what to do. Good problem solvers know how to make plans and use many different strategies in carrying out their plans. They use all of their past experiences to help them in new situations. We learn to swim by getting in the water; we learn to be good problem solvers by solving problems!

parents

MathStars

Commentary for Teachers *Vol. 2 No. 1*

About these newsletters...

The purpose of the MathStars Newsletters is to challenge students beyond the classroom setting. Good problems can inspire curiosity about number relationships and geometric properties. It is hoped that in accepting the challenge of mathematical problem solving, students, their parents, and their teachers will be led to explore new mathematical horizons.

As with all good problems, the solutions and strategies suggested are merely a sample of what you and your students may discover. Enjoy!!

Discussion of problems.....

1. **(28, 31, 33, 37. Twenty-eight can be placed on any of the first three points on the number line. The succeeding numbers must then be proportionally distributed.)** Students must be able to order numbers as well as have a familiarity with the number line in order to successfully complete this problem.

2. **(3 + 4 - 2 + 5 = 10)** Guess and check will probably be the most effective technique to solve this problem. Number tiles would be helpful as students test their conjectures.

3. **(8 ---> 10; 10 ---> 12)** This pattern has as its rule "add two". Students should be asked to identify the rule as well as to extend the pattern to larger numbers.

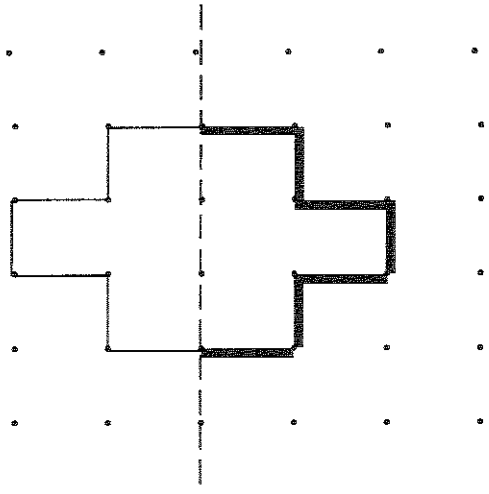
4. **(three cakes)** Students need to know the meaning of "dozen" in order to solve this problem. Drawing a picture, modeling or sorting manipulatives will be helpful strategies.

5. **(19, 91, 82, 37, 73, 46, 64, 55)** Digit and two-digit may be new vocabulary for some students. The ten family facts will need to be explored to arrive at the solution set. The hundred board is a powerful tool for this problem and to explore other digit sum problems.

6. **(10 units)** The broken ruler is a good tool to assess students understanding of measuring against a standard. Students need to count the units that line up with the item to be measured.

parents

7. Spatial visualization helps children to complete this drawing. An understanding of the vocabulary as well as the concept of symmetry is important.



8. **(B, D)** Representing half of a figure is very easy until the whole is divided into different size pieces as shown in this problem. The concept of " less than half" may not be understood by all children at this point.