Math*Stars*

a problem solving newsletter   *Vol. 1 No. 10*

★★★ 1. Bob and his mother went shopping. These are the bills:

Store A
—— ——
—— ——
——
$13.00

~~Store B~~
——— ———
——— $20.00

Store D
———
———
———
$18.00

Store C
——— ———
——— $15.00

Can you figure out what they bought?

Prices:

Shirts $8.00	Pants $12.00
Shoes $10.00	Caps $5.00
Belts $4.00	Jackets $16.00

Store A_____

Store B_____

Store C_____

Store D_____

★ 2. Fill in the missing number:

$$9 + 12 = \boxed{} + 10$$

★★★ 3. Grandma made four peach pies. She used six peaches for each pie. How many peaches did she use?

★★★★ 4. The neighborhood pool opens at 2:00. You arrive at 2:30. How long can you swim before the pool closes?

Pool Hours:
2 - 4 daily

Strategy of the Month

You have tried many ways to solve problems this year. Already you know that when one strategy does not lead you to a solution, you back up and try something else. Sometimes you can find a smaller problem inside the larger one that must be solved first. Sometimes you need to think about the information that is missing rather than what is there. Sometimes you need to read the problem again and look for a different point of view. Sometimes you need to tell your brain to try to think about the problem in an entirely different way - perhaps a way you have never used before. Looking for different ways to solve problems is like brainstorming. Try to solve this problem. You may need to **change your point of view** *.*

Mrs. Gomez is planning a party. She needs seating for 26 people. She can use hexagon tables for six guests and square tables for four guests. She would like to use more hexagon tables than square tables. How many of each does she need?

★★ 5. Three friends went fishing. Juan caught five fish, Betty caught twice as many as Juan and Darryl caught seven. How many fish did the three friends catch?
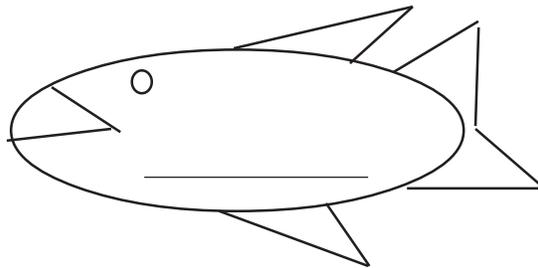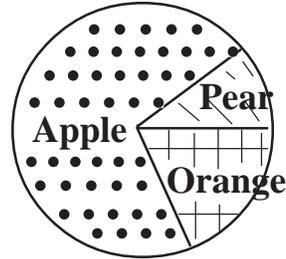
★ 6. Circle the letters that have a line of symmetry:

R D H

S W Y

★★★ 7. Mr. Allen's class made a graph to show their favorite fruit. Look at the information on the graph. Then decide whether the following statements are true or false.

Pear
Apple
Orange

a. More students like apples.

    true or false

b. More students like pears than oranges.

    true or false

c. More students like pears and oranges than apples.   true or false

d. Over half the class prefers apples.

    true or false

★★ 8. Three students bring "Show and Tell" on Monday, five students on Tuesday, seven students on Wednesday. If this pattern continues, how many students will bring "Show and Tell" on Friday?

_____

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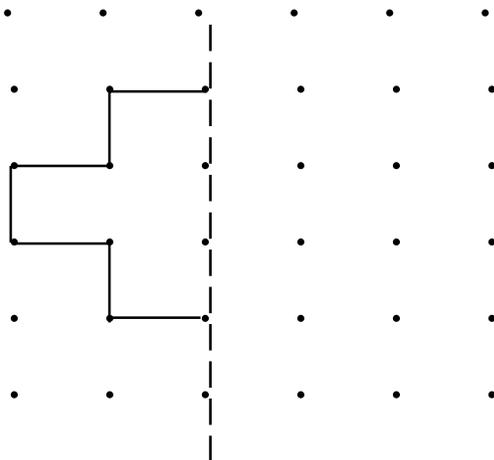
★★ 6. Pat's Mom asked her to measure some ribbon. The only ruler she could find was broken. Pat says she can still measure the ribbon.

8 9 10 11 12 13 14 15 16 17 18
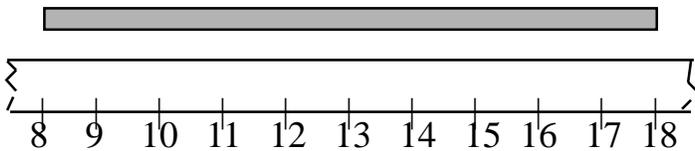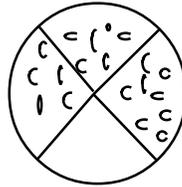
How long is the ribbon?

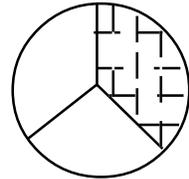★★ 7. This is half of a symmetrical figure. Draw the other half.

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

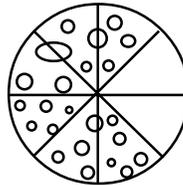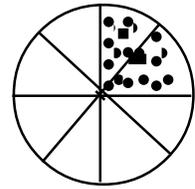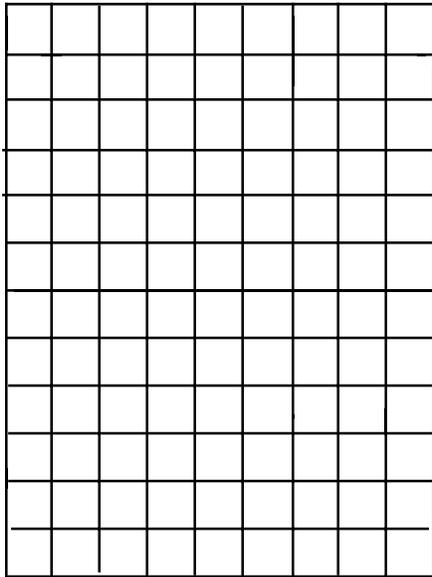Which ones are less than half shaded?

A   B

C   D
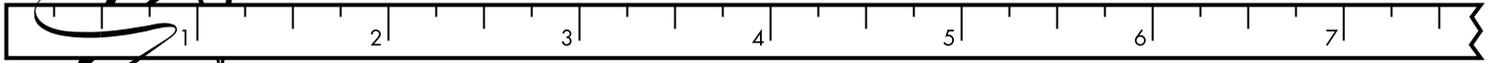
★★   1. Mrs. Williams took a survey of favorite vacation spots in her class. The beach was chosen by eleven students, the mountains by four students and eight students chose the desert. How could Mrs. Williams organize this information in a graph?
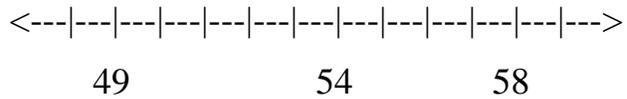
★   2. Draw the line of symmetry for each of these shapes.
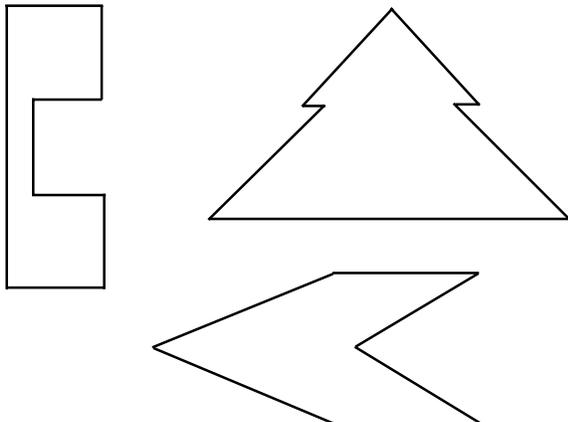
★★   3. Complete this pattern:

1---> 2
2 ---> 4
3 ---> 6
4 --->____
5 --->____

★   4. Here is part of a number line:

<---|---|---|---|---|---|---|---|---|---|---|---|--->
    49   54   58

 Which of the following numbers cannot fit on it?

 a. 60   b. 40   c. 51   d. 59

Strategy of the Month

*Your brain is an organizer. It organizes information as it stores that information. When a problem involves many pieces of information, your brain will have an easier time sorting through it if you make an organized list. A list helps you be sure you have thought of all of the possibilities without repeating any of them. Like drawing a picture or making a diagram, making an organized list helps your brain "see" the problem clearly and find a solution. Try **making an organized list** to solve this problem:*
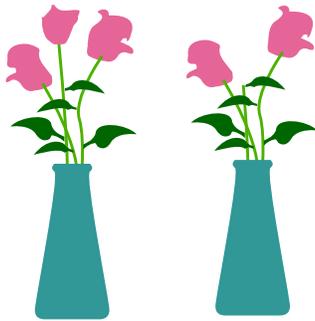
 You have three pennies, two nickels and a dime. How many different amounts of money can you make?

★★ 7. Mr. Cutter put six pennies in a jar. He shook them up and poured them on his desk. He got two heads and four tails. If he does this experiment lots of times, what are the other combinations that he can get?
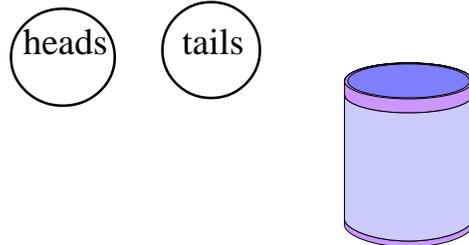
heads   tails

★★★ 5. Jill counted the number of petals on five flowers that are all alike. When she finished she had counted 20 petals. How many petals are on each flower?

★★★ 8. Which is worth more: seven inches of dimes or nine inches of nickels?

★★★ 6. Put in + or - to make this statement true.
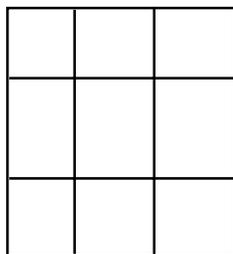
8 ☐ 4 ☐ 6 ☐ 7 = 11

★★★ 1. Latesha is building with tiles. Her design has a pattern like this:
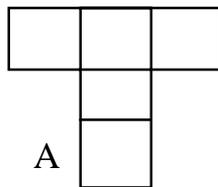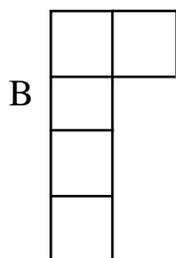
1
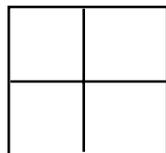
4

9

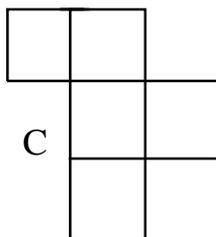What will her next design look like? How many tiles will she use?

_____

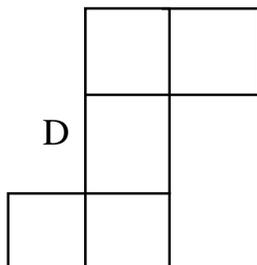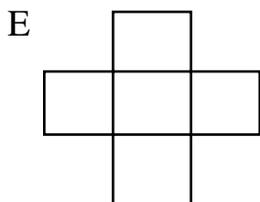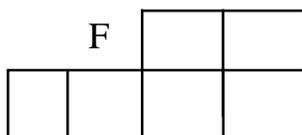★★ 2. Circle the symmetrical figures:

A

B

C

D

E

F

★★★★ 3. Flopsy and Mopsy are rabbits. Mopsy eats more than Flopsy. When Flopsy eats one bowl of food, Mopsy eats three bowls of food and when Flopsy eats two bowls of food, Mopsy eats six bowls of food. If Flopsy eats five bowls of food, how much will Mopsy eat?

_____

★★★ 4. Use the digits 2, 4, 6, 7 to make this a true statement:

☐ ☐
+ ☐ ☐
_____
1   0   0

Strategy of the Month

Being a problem solver is something like being a detective! A detective has to solve crimes by guessing what happened and checking the guess to see if it fits the situation. For some problems, your best strategy may be to make a guess and then check to see if your answer fits the problem. If not, decide if your guess was too high or too low and then make a second "guesstimate." A good detective keeps records (usually some kind of chart) to help see any patterns and to narrow down the possibilities. You should do this too. The results of incorrect guesses can give you valuable clues to the correct solution. **Guess and then check** *the solution to this problem:*

Billy has 42 marbles to put in boxes. Each box will hold five marbles. How many boxes will he need?

★★★★ 5. Luke made flowerpots for his friends. He has 32 flowers. If he puts six flowers in each pot how many pots will he make?

_____

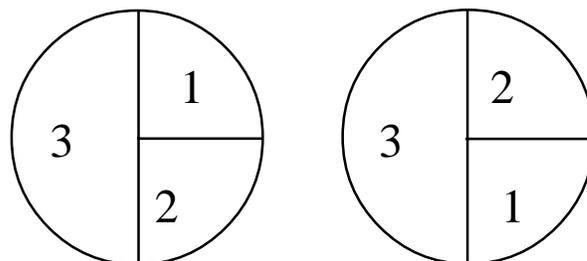★★★ 6. Alyssa's class graphed their favorite colors. This is what they like:

Color	Number
Red	5
Blue	7
Green	6
Orange	3
Yellow	5

Help them complete the circle graph.
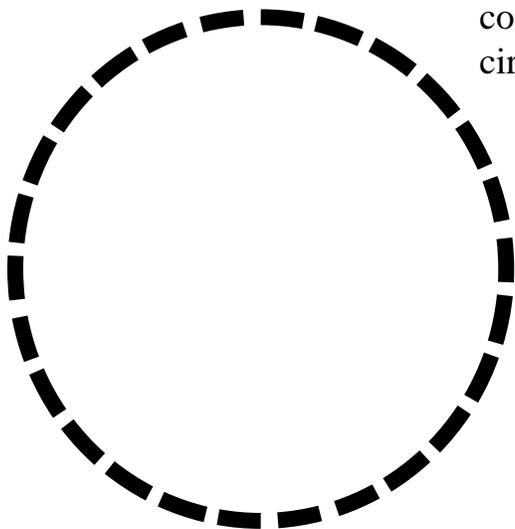
★★★ 7. Carlos has spinners like these:

If he spins each one and adds the results, what sums do you think he will get?

★★★★ 8. Farmer Jones has an orchard that will hold 12 trees. He will plant the same number of apple trees and pear trees. He will plant twice as many cherry trees as apple trees. How many of each will he plant?

_____Apple trees

_____ Pear trees

_____Cherry trees