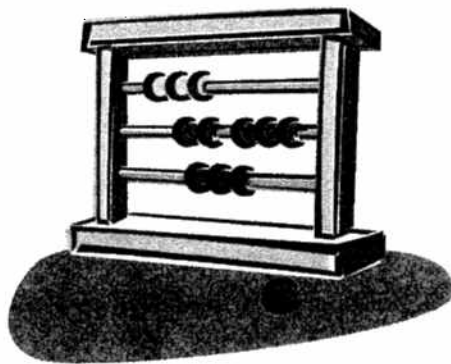


# *Math Enrichment Packet*



## *Grade 3 -Packet #1*

Name \_\_\_\_\_ Date \_\_\_\_\_

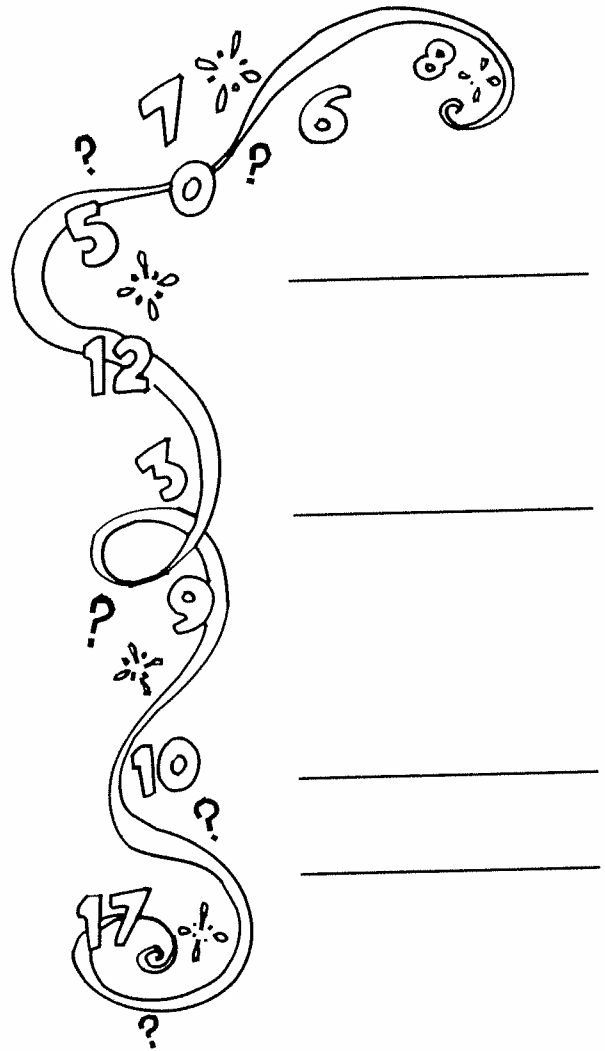
Teacher \_\_\_\_\_



# Everything in Its Place

Place Values:			
thousands	hundreds	tens	ones

- I am a 4-digit number. I have a 2 in the thousands place and a 4 in the hundreds place. I am a palindrome, so I read the same forward and backward. What number am I?
- I am a 4-digit number. I am less than 2,500 but greater than 1,200. The sum of my digits is 4. None of my digits are even. What number am I?
- Use the digits 7, 3, 5, 8, and 2. What are the smallest and largest numbers you can make using each digit exactly once?




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## DESCRIBING



Describe the strategy you used to find the numbers. Is there more than one answer to the problems? How do you know?



## Money Matters

1. Thomas is saving up for a new skateboard that costs \$60.00. He has saved only \$16.25.

a. How much more does he need? Show your work.



- b. Thomas is expecting his allowance. On Friday his mom will pay him \$8.00. His little brother will pay back the \$0.75 he borrowed. How much does Thomas have now? How much does Thomas still need? Show your work.

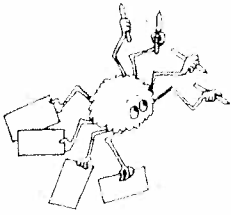
Thomas has \_\_\_\_\_. Thomas needs \_\_\_\_\_.

- c. Thomas's grandmother sent him a check for his birthday. The check was equal to half the amount Thomas still needs. How much was the check? Show your work.
- d. What is the total amount of money Thomas has saved? Show your work.
- e. What is the difference between the amount saved and the cost of the skateboard? Show your work.

### REFLECTING



Suggest several ways Thomas might be able to raise the rest of the money.



## Check Your Skills

Answer the following questions on a separate piece of paper.

1. Danielle, who is 8, loves to go swimming at the beach. The beach is a 3 mile round trip from her house. She can only go to the beach with one of her parents. She always takes a picnic lunch. How many miles has Danielle traveled after going to the beach 8 times?
2. Gerald went shopping. He has \$75 of birthday money to spend. He chooses a video game for \$34.67, a box of baseball cards for \$9.21, a DVD for \$24.99, and a toy for \$8.34.
  - a. Gerald does not have a calculator or paper and pencil. How can he decide if he has enough money for all his choices?
  - b. Will Gerald have enough money? Explain.
  - c. How would you change Gerald's selections so that he spends as much as possible without going over \$75?
3. Caitlyn and Zachary are twins. Their father baked them each a small cake for their birthday. The cakes were different flavors but the same size. Caitlyn's cake was cut into 4 pieces. Zachary's cake was cut into 8 pieces. Caitlyn was given 1 piece from her cake. Zachary was given 2 pieces from his cake.

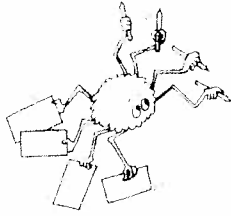
- a. Write the fraction of each cake that each child was given.

Caitlyn: \_\_\_\_\_

Zachary: \_\_\_\_\_

- b. Which twin had more cake? Explain.





## Check Your Skills (cont.)

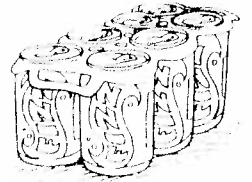
4. The Three Little Pigs, the Three Bears, and Goldilocks are getting together for lunch.

a. How many plates will be needed at the table? Explain.

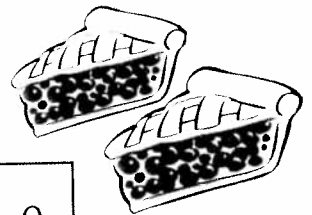
b. If each guest brings a friend, how many will be at lunch?

c. How many more plates will be needed?

d. Goldilocks has a friend who works for the soda company. He is donating 5 cases of soda for the luncheon. Each case contains 12 cans. How many cans may each guest have? Will any cans be left over?



e. The guests could order 4 cookies or 2 slices of pie for dessert. There are a total of 24 dessert items on the table. Not every guest ordered dessert. How many guests could have ordered each dessert? Fill in the table showing the different ordering combinations.



# ordering cookies	6	5	4	3	2	1	0
# ordering pie							

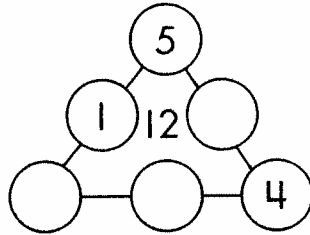




## Triangle Teasers

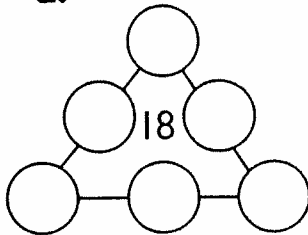
The sum of each side of the triangle must equal the number in the middle of the triangle.

1. Place the numbers 1, 2, 3, 4, 5, and 6 in this triangle so that all the sides add up to 12. Part of the triangle has been done for you.

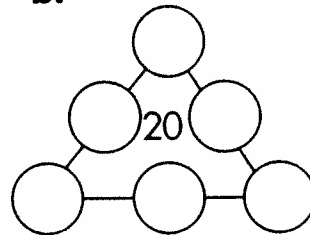


2. Use the numbers 4, 5, 6, 7, 8, and 9 in these triangles.

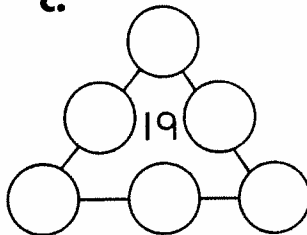
a.



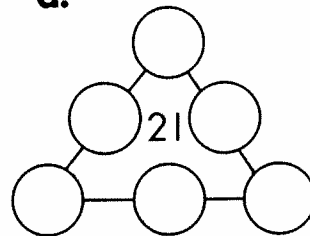
b.



c.



d.



### EXPANDING



Write directions for your own Triangle Teaser.



## Missing Numbers

1. Each of the symbols represents a number.
- a. Find the numbers that make both equations true.
- $$\text{spider} \times \text{flower} = 14 \qquad \text{spider} - \text{flower} = 5$$
- $$\text{spider} = \underline{\hspace{2cm}} \qquad \text{flower} = \underline{\hspace{2cm}}$$
- b. What strategies did you use to find the missing number?
2. What number is missing from each row? Work inside the parentheses first. Then work the equation from beginning to end.
- a.  $(7 + 7 - 4) \times \blacksquare = 20$       b.  $(4 \times 4) + 3 - \blacksquare = 9$
- $$\blacksquare = \underline{\hspace{2cm}} \qquad \blacksquare = \underline{\hspace{2cm}}$$
- c. How can you check to make sure your answers are correct?
3. Write and solve the number equation if  $\blacktriangle = 5$  and  $\blacksquare = 7$ .
- a.  $\blacktriangle + \blacksquare = ?$       b.  $\blacktriangle \times \blacksquare = ?$       c.  $\blacksquare - \blacktriangle = ?$

Equation: \_\_\_\_\_ Equation: \_\_\_\_\_ Equation: \_\_\_\_\_

### EXPLAINING

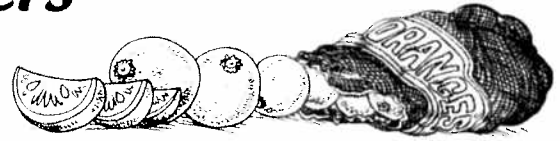


Explain how to find missing numbers.



## Lots of Liters

30 milliliters (mL) = 1 fluid ounce (fl. oz.)



1. Rosalie's family bought a juicer. Rosalie squeezed 240 mL of orange juice from 3 oranges. Answer the questions to find out how many ounces of orange juice she had.
  - a. Converting milliliters to fluid ounces is converting (smaller/larger) units to (smaller/larger) units, so (multiply/divide).
  - b. 240 mL \_\_\_\_\_ 30 mL/fl. oz. = \_\_\_\_\_ fl. oz.
  
2. Rosalie is making breakfast. Each person will drink 8 fl. oz. of orange juice. There are 4 people drinking juice. Answer the questions to find out how many milliliters she needs.
  - a. How many total fl. oz. does Rosalie need? Show your work.
  - b. Converting fl. oz. to milliliters is converting (smaller/larger) units to (smaller/larger) units, so (multiply/divide).
  - c. \_\_\_\_\_ fl. oz. \_\_\_\_\_ 30 mL/ fl. oz. = \_\_\_\_\_ mL
  
3. At the end of the day, Rosalie has 14 fl. oz. of juice left over.
  - a. How many milliliters does she have? Show your work.
  - b. That night, Rosalie drinks 240 mL of the remaining juice. How many fl. oz. are left? Show your work.

### EXPLAINING



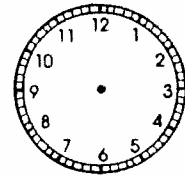
Explain how to convert from mL to fl. oz.  
Explain how to convert from fl. oz. to mL.



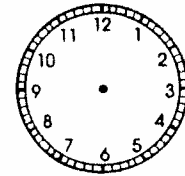
## A Matter of Time

1. Gyan gets up at 6:30 every morning to deliver newspapers. It takes him 45 minutes to finish his route.

a. Draw hands on the clock to show the time he gets up.



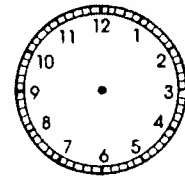
b. Starting at 6:30 on the clock, count by fives until you reach 45 minutes. Draw hands on the clock to show the time Gyan finished his route.



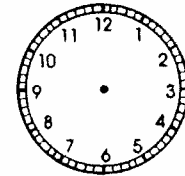
2. How many hours does he deliver papers per week if he delivers Monday through Friday? Show your work.

3. Gyan needs 30 minutes to walk to school. School starts at 9:50.

a. Draw hands on the clock to show the time school starts.



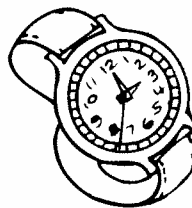
b. What is the latest time Gyan can leave for school and still get there on time? Draw hands on the clock to show the latest time he can leave.



### EXPANDING



Make up two questions about time.

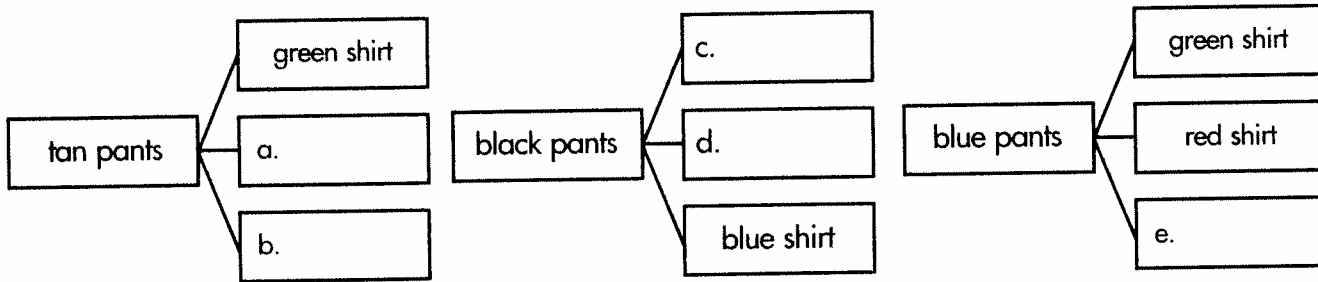




# Packing Problems

Dan had to pack carefully for the trip. He did not want to pack a lot of clothes. He did not want to repeat the same outfit. He packed tan pants, black pants, blue pants, a green shirt, a red shirt, and a white shirt.

- Show all the combinations of outfits he could wear by completing the tree graphs.



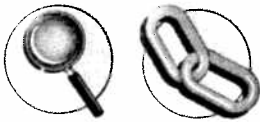
- Trace the paths on the tree graphs to make a list of all possible outfits.
- Will Dan have enough different outfits for the 7-day trip?
- Would Dan have enough outfits if he packed 2 shirts instead of 3? Explain.



## REFLECTING



Suggest some ways you might be able to use a tree graph.

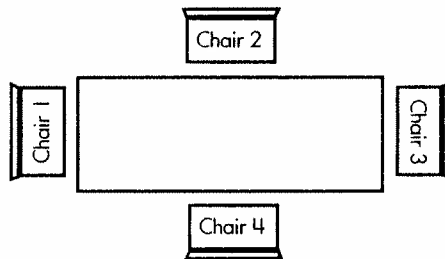


# Combinations

## Number of Possible Combinations

# of first options x # of second options x # third options x # fourth options

1. Sean, his sister Tammy, his mom, and his dad are going out for dinner. The diagram below shows the 4 seats at the table. What are the possible combinations of seating arrangements?



- There are 4 people who might sit in the first seat, so put a 4 above chair 1.
- After 1 person sits down, there are \_\_\_\_\_ people who might sit in the second seat, so put \_\_\_\_\_ above chair 2.
- There are \_\_\_\_\_ people left for the third seat, so put \_\_\_\_\_ above chair 3.
- There is only 1 person left, so put 1 above chair 4.
- Multiply the number of possibilities for each option.

$$\frac{\quad}{\text{chair 1}} \times \frac{\quad}{\text{chair 2}} \times \frac{\quad}{\text{chair 3}} \times \frac{\quad}{\text{chair 4}} = \underline{\quad}$$

21. A person bought a horse for \$275, sold it for \$295, buys it back for \$325 and sells it again for \$350. After all of that, has the person made or lost money, and how much?

Explain how you got your answer.

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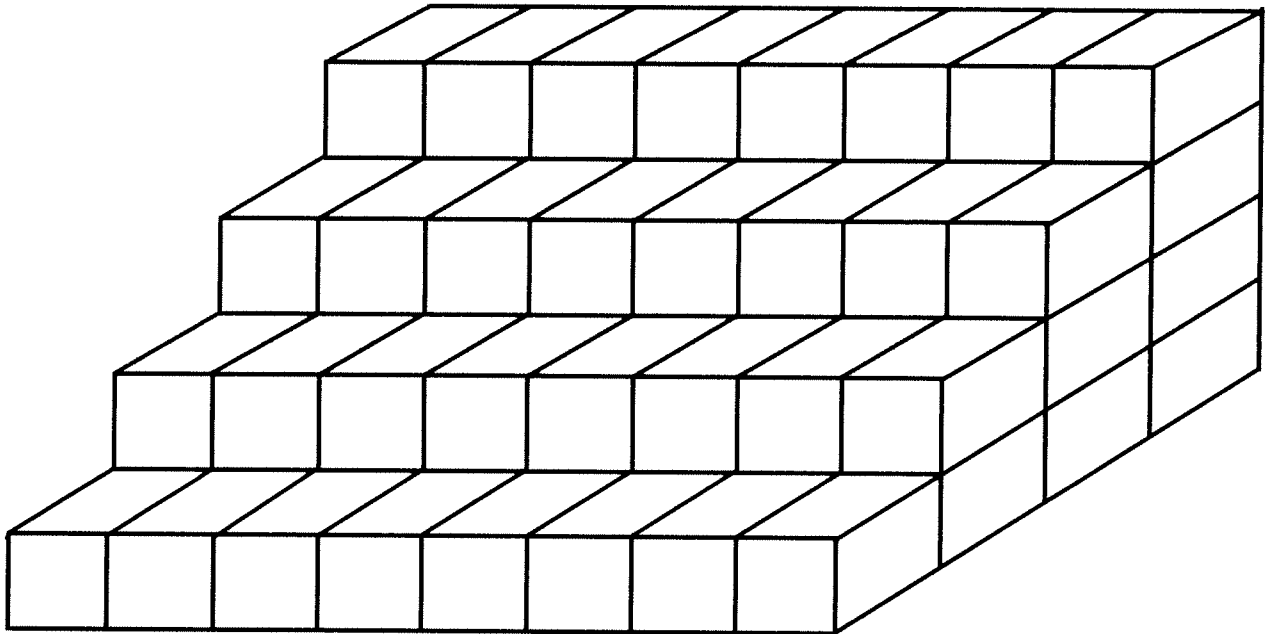
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46. Given 9 8 7 6 5 4 3 2 1, where would you put plus signs so the values you create give a sum of 99? You may not change the order of the digits. One solution is  $9 + 8 + 7 + 6 + 5 + 43 + 21 = 99$ . What is another one?

- 103.** Twenty-five elementary school kids are going on a field trip in rented vans. Each rented van has seven seat belts. Each traveler must occupy a seat-belted seat. How many vans are needed for the field trip?

**72.** How many blocks does it take to make the set of steps shown?  
 Assume the steps are not hollow.



Explain how you got your answer.

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