

## Enatai Math Challenge 2

### December 2008

These problems are labeled in order of increasing difficulty. Choose the one that you think fits your grade and math ability and solve the problem. People at home can help you. You will need to submit your answer using the R-E-C format that is explained on the attached form. Be certain to put the letter of the problem, your name and your teacher's name on the form when you submit it. All solutions are due to Mrs. Gaylord by Friday, December 19. Bring your completed R-E-C form to the office. Students who successfully complete the challenge with the correct answer and a logical explanation of their mathematical thinking will receive a certificate and their name listed in the Principal Update. Happy Problem Solving!!!

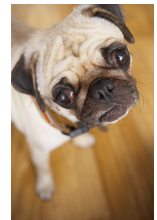


#### **Primary Problem A**

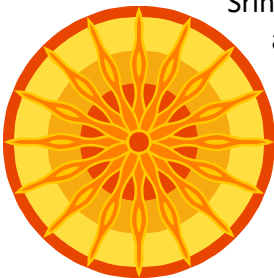
There are three piles of money on the table. One pile has 250 pennies. The second pile has 70 nickels, and the last pile has 40 dimes. Which pile contains the most money? How much money does it contain?

#### **Primary Problem B**

The Chinese calendar gives each year a different animal name. There are 12 animals in the cycle. The year of 2006 was the Year of the Dog. What is the next year that will be the Year of the Dog? What was the last Year of the Dog before 2006?



#### **Primary Problem C**



Srinivasa Ramanujan was a mathematician who was born in India in 1887. He found an amazing way to give the exact number of partitions possible for a positive whole number. A partition is a way of showing a number as the sum of other numbers.

The number 5 has seven possible partitions:

$$5 = 1 + 1 + 1 + 1 + 1$$

$$5 = 2 + 1 + 1 + 1$$

$$5 = 3 + 1 + 1$$

$$5 = 4 + 1$$

$$5 + 5$$

Find all the partitions for the number seven. How many partitions are there?

#### **Primary Problem D**

Cal Ripken Jr. of the Baltimore Orioles holds the world record of 2,632 for the number of consecutive baseball games played. Major-league professional baseball teams in the United States play 162 games per season, not including the playoffs, the All-Star Game, and the World Series. Over how many baseball seasons does Cal Ripken's record span?



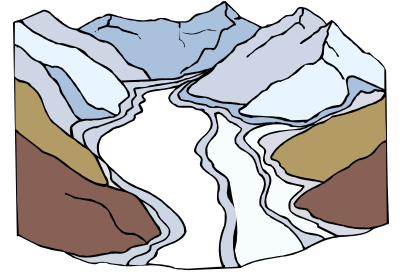


### **Intermediate Problem E**

Would you like to know about how many active volcanoes are in the world? You can be a geologist and experience them all- *if* you visit 75 volcanoes per year for the next 20 years! Using this information, can you figure out the number of active volcanoes?

### **Intermediate Problem F**

Most glaciers are slow movers. They grind forward approximately 6 feet (2 m) per day. How far would a typical glacier travel in a week? In a month? In a year?



### **Intermediate Problem G**

In New Zealand, the exchange rate averaged one New Zealand dollar (NZ\$1) equals \$0.44 United States dollars (US\$.044). Ms. Anno found a NZ\$30 tie that was perfect for her father and a NZ\$95 jacket for her son, Jason. How much would each item cost her in US\$?

### **Super-Duper Challenge Problem**

Four black ants can lift as much as five red ants; two red ants and one black ant can lift as much grain as two beetles. Can two beetles and three red ants lift as much grain as one red ant and four black ants?

