



2009-2010 Puzzle Contest #4

First Name _____ Last name _____



Parents and Grandparents Puzzles:

1. CATCH FIGURES WHICH ARE FAR FROM DECIMAL POINT

What is the sum of the 2010th and the 1,999,992nd figures after the decimal point in the number $(\sqrt{2602} - 51)^{999,999}$? Why? **40 points**

2. HOW TO OPEN SUITCASES SURELY

There are 7 closed suitcases and 7 keys for them. However it is unknown what key matches to what suitcase. What is the least guaranteed number of attempts necessarily to find out which key opens each suitcase? **15 points**

3. ISLANDERS AND THE KEEN-WITTED TRAVELER

The islanders on the island of knights and liars who know one another well formed a circle and every one of them told a traveler whether his right neighbor was a knight or a liar. According to these statements, a traveler defined without a doubt which fraction of the islanders were knights. What did he define? Why? **25 points**

4. THE REPORT OF A PRESIDENT

“In the past calendar year, for any 5 months in row our company’s expenses exceeded our income for the same period of time but the annual income exceeded the annual expenses”, a president of a company reported to stockholders at the end of year. The stockholders brought a class action suit against him for fraud. Will he win or lose?? **20 points**

Submission Deadline is March 20

Solutions can be emailed to anna@metrowestschool.com, deposited into the Tuition Box in the office, or mailed to us or deposited into our Mailbox