



## 2011-2012 Puzzle Contests

# Puzzle Contest #3



### Parents and Grandparents Puzzles:

#### 1. JAMES BOND'S CRYPTOGRAM

**JAMES BOND HAD TO DELIVER TO THE CENTER** a combination of four secret natural numbers  $\{A, B, C, D\}$ . To add a level of secrecy, he has sent a set of numbers  $\{A+B, A+C, A+D, B+C, B+D\}$  in an unknown order. The following numbers were received: 13, 15, 16, 20, 22 from which the original combination was found. What numbers did the original set consist of? (20 points)

#### 2. THE BUNNY AND THE WOLVES

**AT THE CENTER OF A SQUARE THERE IS A BUNNY**, and there is a wolf in each of the four corners of the square. Could the bunny run away from the square crossing its boundary without being caught, if the wolves can only run along the sides of the square with a maximum speed that is 1.4 times greater than the maximum speed of the bunny? Why? (50 points)

#### 3. WHO STOLE THE CAR?

**IN A TOWN THERE ARE THREE TYPES OF PEOPLE:** those, who always tell the truth (honest); those, who always lie (liars); and jokers that can either lie, or tell the truth according to their mood... Someone has stolen the mayor's car. Police questioned three people: John, Jack and Jo. Police received credible information that one of them is honest, one of them is a liar, but nothing is known about the third. It is also known that the one who stole the car is honest. The following statements were made:

*John: I'm not guilty.*

*Jack: He speaks nothing but truth.*

*Jo: I stole the car.*

Who stole the car and who is a liar? Why? (30 points)

Solutions deadline is January 22

Please submit your solution to [anna@metrowestschool.com](mailto:anna@metrowestschool.com)  
or bring them to the office