



2009-2010 Puzzle Contest #3 Solutions



Grades K-5 Puzzle Solutions:

1. KNIGHTS STAND ALWAYS HIGH ESTEEM OF

On an Island, there live two kinds of people: *Knights* who are always truthful and *Liars* who always tell lies. A traveler met three islanders and asked each of them: “How many knights are there among your companions?” One of them answered: “None”, the other one answered: “Only one of them is”. What was the answer of the third one? Explain your answer.

50 points

Answer: The answer of the third Islander has to be : “Only one is”. Assume the first one is a knight. Then the second one and the third one are liars according to his words. But it is impossible because of the second one’s statement. Therefore the first one is a liar. If the second one is a liar then the third one is also a liar and the first one said truth. This means the second one is a Knight, and so is the third one.

2. THE ONES DIGIT DETERMINES THE WHOLE NUMBER

The natural number is 31 times more than its ones digit. How many numbers like that are there? What are they? **30 points**

Answer: 9 numbers. They are: 31, 62, 93, 124, 155, 186, 217, 248, 279

3. THE NEW YEAR GIFTS

There are three New Year gifts in three boxes, and there is a note on each of them. Notes are “ iPhone”, “iPod”, “iPod or iTunes ”. The content of each box does not match to the note of it. What thing is in each box really? **20 points**

Answer: If all three gifts in the boxes are different, then the only solution is

Notes on the box	iPhone	iPod	iPod or iTunes
Really	iPod	iTunes	iPhone

But the problem does not state that all three gifts are different, so other possible solutions are:

Notes on the box	iPhone	iPod	iPod or iTunes
Really	iTunes	iTunes	iPhone



<i>Notes on the box</i>	iPhone	iPod	iPod or iTunes
<i>Really</i>	iPod	iPhone	iPhone

<i>Notes on the box</i>	iPhone	iPod	iPod or iTunes
<i>Really</i>	iTunes	iPhone	iPhone