

2017-2018 Puzzle Contests

Solutions for Contest #3



Grades K-5 Puzzle Solutions:

1. There are 2018 lamp posts on the road from Santa Claus's House to the North Pole. The first lamp post is right at Santa's porch, and the 2018th lamp post is right at the North Pole exactly. The lamp posts are placed at equal distances from each other along road. The distance between 1001st and 1010th lights is 180 yards. What is the distance (in yards) from Santa's home to the North Pole? **(25 pts)**



Answer: 40340 yards.

2. Garry, George and Greg are wearing costumes for the Christmas Party. One of them is dressed as Santa, one as Reindeer and one as Elf. Garry wears neither in the Santa nor the Elf costume, and Greg is not the Elf. Which costume does each of them wear? **(35 pts)**



Answer: Garry is the Reindeer, George is the Elf, and Greg is the Santa.

3. Santa and his Elf are playing a game. They have

“ CHRISTMAS ELF”

written on the snow. They take turn erasing letters. The rule is that on each turn, one can erase either one letter, or a letter and all the same letters. The one who erases the last letter, wins. The Elf begins. Who wins if the both players are not making mistakes and act in the most clever way? Why? **(40 pts)**

Answer: The Elf wins.

Proof: The Elf has a winning strategy. On the first turn, he erases the two Ss. The remaining 10 letters are all different, so no matter what letters they pick, they will pick one letter at a time, and the Elf will take the 10th letter.