

2017-2018 Puzzle Contests

Contest #5



Parents and Grandparents Puzzle:

1. In some city, anyone 40 years or older always tells the truth and anyone under 40 never tells the truth. A census taker knocks on the married couple's door. The husband opens the door. 'I am the census taker,' says the visitor, 'and I need information about you and your wife. Which, if either of you, are under the age of 40?' 'We are both under 40!' said the husband angrily as he slammed the door. How did the census taker sort out the facts? Why? **(25 pts)**
2. You and your spouse invite four other couples to a spring party. During the course of the conversation, it is discovered that, prior to the party, each person except you was acquainted with a different number of the people present. Assuming the acquaintance relationship is symmetric (i.e., if you are acquainted with someone, that person is also acquainted with you), then how many people did your spouse know prior to the party? How many people did you know? **(30 pts)**
3. The cubic polynomials $p(x)$ and $q(x)$ satisfy the following conditions:
 - $p(1) = q(2)$
 - $p(3) = q(4)$
 - $p(5) = q(6)$
 - $p(7) = q(8) + 13$.Find $p(9) - q(10)$. **(45 pts)**



Solutions deadline is May 20
Please submit your solutions to anna.charny@metrowestschool.com
or bring them to the office