MTH 396 Exam Review Problems

1. On a merry-go-round there are 12 horses that are evenly spaced on the outside perimeter. It takes four seconds for the fourth horse to reach Abe, starting when the first horse is directly opposite him. How long will it take the merry-go-round to go around once? You might find the strategy of drawing a diagram useful.

2. We always liked poking around Grandpa's attic whenever we had a family reunion. We found all sorts of neat stuff up there. Once we found a bunch of baseball cards, so Grandpa said "Just divide 'em up among all the grandchildren." There were 5040 cards in all. We were able to divide them evenly among us and each of us got a lot of cards. But then we remembered that the Limmeroths, who had five of the grandchildren, hadn't arrived yet. So each of those of us present had to give up 75 cards so that all the grandchildren including the Limmeroths would have exactly the same number of cards. How many grandchildren does Grandpa have? **Use the strategy of making an organized guess and check table.**

3. Amaya, Ostergard, Blue Cloud, and Katricz are the last names of Timothy, Diana, Mark, and Sherry. They are all playing in a mixed doubles tennis tournament. Two people are on each team. There is one man and one woman on each team. Determine the full name of each player by using the clues below.
    1. Mark is a better player than Ostergard.
    2. Timothy is Diana's partner.
    3. Sherry and Katricz are on the same team.
    4. Amaya is known for his wicked serve.
    5. Katricz is an opponent of Ostergard.
    6. Blue Cloud is an opponent of Amaya.

4. Mrs. B's class has twice as many girls as boys. Mr. C's class has 4 more students than Mrs. B's class. If the combined number of students in both classes is 46, how many girls are in Mrs. B's class? How many boys are in Mrs. B's class?

5. Miss Von Thaden tried very hard to make sure that nobody was left out during the PE classes in which her students danced. She thought she had a correct head count, so she told them to pair up. This didn't work because there was one person left out. She then told them to get into groups of five, but this didn't work either because again there was one person left over. So she tried setting up groups of three, but unfortunately there was one left over. Finally, she decided to try groups of four. Again there was one person left out. There are fewer than 80 students in the dance class. How many were present on that particular day?

6. The ratio of teachers to children at Great Start Preschool is now 2:9. If 5 more teachers were hired, the ratio would be 1:3. How many children attend Great Start Preschool?

7. There were five cars remaining in contention by the end of the Georgetown One-Hundred-Mile Classic-Car race. The Dusenberg finished 12 seconds ahead of the Edsel. The Studebaker finished 7 seconds behind the Model T Ford. The time from when the first finisher crossed the line to the last finisher was 22 seconds. The Pierce-Arrow finished 14 seconds after the Model T Ford. The Edsel came in third place. List the cars in the order in which they completed the race, and the times between them from the first to fifth places.

Below are the questions from Activity 6 – they are also good for reviwe

8. The ratio of Sue's age to her father's age is 2 to 7. In three years, their ages will total 60 years. How old is Sue now and how old is her father now?

9. Clara is 31 years old. Her sister Molly is 47. In how many years will their total ages be in the ratio of 4 to 5?

10. Separate 43 people into 2 groups so that the first group has 5 less than 3 times the number in the second group.

11. The sum of 2 numbers is 40. Their difference is 14. What are the numbers?

12. The sides of one square are 2 inches longer than the sides of another square, and its area is 48 square inches greater. What is the length of the side of the smaller square?

13. Two sisters together have 20 books. If the younger sister lost 3 books and the older sister doubled the number she has, they would have a total of 30 books. How many books does each have?

14. Of the children in a room, 3/5 are girls. There would be an equal number of boys and girls if the number of boys is doubled and 6 more girls were added. How many children are in the room?