GCF and LCM Problems

1. Pencils come in packages of 18. Erasers that fit on top of these pencils come in packages of 24. What is the smallest number of pencils and erasers that you can buy so each pencil can be matched with an eraser? How many packages of each will you need?

2. Ko has a bag with 45 red candies and another with 75 green candies. She wants to make goody bags so that each goody bag contains the same number of red candies and the same number of green candies and so that she uses up all of the candies. What is the largest number of goody bags she can make this way? How many of each color candy will be in each goody bag?

3. Same has lots of 8-inch sticks he is placing end to end to make a line of sticks. Becky has 12-inch sticks that she is placing end to end as well. If they want their line of sticks to be the same length, how long could they be? What is the shortest such length?

4. If I have a room which is 45 by 36 feet, what is the largest square with which I can tile it?

5. If my tiles are each 24 by 36 cm, what is the smallest square room that I can tile using the tiles in one direction only and not cutting the tiles?

6. I have red lights which are 50 to the string and blue lights which are 30 to the string. To hang them from the house, I must put a hanger at the beginning and the end of each strand an evenly space the rest.
   (a) How often must I put the hangers so I can string the two colors together using the smallest number of hangers?

   (b) How often will I have a common plug? (That is, reach an end of both colors at the same time?

7. Red chips are 75 to the package and blue chips come 50 to the package.
   (a) How do I package them in single color packages so the packages will be as tall as possible, but both types will have the same height (same number of chips in each stack)?

   (b) If these packages are then put in boxes of single color chips, but I want the same number of chips in each box, what is the least number of chips I can have per box?

8. Shane, Emily, Jane and Brad play in a string quartet. Their quartet has a gig at a wedding coming up and they need to get together to practice. Emily can only practice with them every 6 days. Shane and Brad can both practice every 4 days. And, Jane, who is the busiest of them all, can only practice with them every 12 days. Assuming they can practice together today, when will be the next time they can all get together to practice?