Probability Practice Through Permutations

1. How many ways can you arrange the letters of *peppermint*?

2. What is the probability that a randomly selected 4 digit number will end in 21?

3. How many ways can you arrange 4 different china dolls from a collection of 7 different china dolls?

4. What is the probability of selecting a face card from a standard deck of cards?

5. How many different ways can a Speaker, Chairman, and Auditor be chosen from a group of 12 people?

6. How many passwords can be created in the pattern: letter, digit, letter,letter,letter,digit if only vowels can be used and only odd digit can be used but not repeated?

7. a) How many ways can you award ice cream to 4 people out of a group of 9?

    b) What if the first person got 4 scoops, the 2nd 3 scoops, etc?

8. What is the probability that you will select 3 blue and 2 yellow marbles from a group containing 4 red, 5 yellow, and 6 blue marbles? Round to nearest tenth of a percent.

9. How many ways can you choose 2 red and 5 brown M&Ms from a jar containing 7 yellow, 4 red, and 8 brown M&Ms?

10. How many ways can you award 5th and 6th place to 7 runners in a race?

11. You are to do your homework between 7 and 8 o'clock. What is the probability that you will NOT be doing your homework in the time period 7:05-7:07?

12. Twelve blue, 4 black, 8 yellow, and 2 red buttons are in a jar. What is the probability that when you select one button it will not be a color that starts with the letter "b"?

13. How many different sandwiches can be made if one ingredient from each of the following categories must be chosen:

Bread: Rye, wheat, sourdough

Cheese: American or pepper jack

Meat: bologna, turkey, ham, chicken, roast beef

Veges: cucumber, spinach, lettuce,peppers,onion,,olives

14. How many different arrangements of 10 booths are there if they are to be placed around the sides of a small square gym?

Answers:		
1. 302400	2. 1/100	3. 840
4. 3/13	5. 1320	6. 12500
7. a) 126 b) 3024		8. 200/3003
9. 336	10. 42	11. 29/30
12. 5/13	13. 180	14. 362880