

Alg 2B Classwork After Test #2 Spring 2018 Name:

Find the number of outcomes for each situation using either:

- a. The Multiplication Counting Principle b. Factorials c. Permutations

State which method you used and show your "work".

1. From a list of 10 songs, you are asked to pick your 1st, 2nd, and 3rd favorite songs. How many different ways of choosing your top 3 are there?

2. A card game uses a special deck where each card has a number and a color. The numbers range from 1 to 12. The colors are red, orange, yellow, green, and blue. For example, there is a "5 blue" card. If the deck has one card with each of the possible pairings of number and color, how many cards are there in the deck?

3. How many different ways could you answer a set of 10 multiple-choice questions, where each question has answer choices {A, B, C, D, E}?

4. A series of Massachusetts license plates has 4 numbers followed by 2 letters (Capital letters only). How many different license plates are possible?

5. There are 5 baseball teams in the American League Eastern Division: Baltimore, Boston, New York, Tampa Bay, and Toronto. How many different ways could the finish in the standings assuming there isn't a tie for any position?

6. The digits 1234567 can be rearranged in how many different orders?

7. If a "word" is considered an arrangement of 4 letters (it doesn't necessarily have to be found in the dictionary) find the number of four-letter words that can be made from the standard english alphabet if:
a) Letters can't repeat. b) Letters can repeat.

8. Suppose there are 100 students with projects entered in a science fair. Of them, 5 students must be chosen to be win 1st, 2nd, 3rd, 4th, and 5th prize. How many different ways could the winners be chosen?

9. A family with five children assigns chores each week: one child will wash the dishes, another will take out the trash, another will clean the bathroom, another will vacuum, and the last child will mow the lawn. How many different ways can these chores be assigned?

10. A store has to hire a manager, a daytime manager, and a nighttime manager . Ten people are interviewed for the jobs. How many different ways can the hiring decisions be made?