More Practice 11.1-11.3   Name _____

Show All Work.

_____1. You are taking a multiple-choice test that has eight questions. Each of the questions has three answer choices, with one correct answer per question. If you select one of these three choices for each question and leave nothing blank, in how many ways can you answer the questions?

_____2. There are 14 standbys who hope to get seats on a flight, but only 6 seats are available on the plane. How many different ways can the 6 people be selected?

_____3. In how many different ways can a police department arrange eight suspects in a police lineup if each lineup contains all eight people?

_____4. For a temporary job between semesters, you are painting the parking spaces for a new shopping mall with a letter of the alphabet and a single digit from 1 to 9. The first parking space is A1 and the last parking space is Z9. How many parking spaces can you paint with distinct labels?

_____5. The local seven-digit telephone numbers in Inverness, California, have 669 as the first three digits. How many different telephone numbers are possible in Inverness?

_____6. A signal can be formed by running different colored flags up a pole, one above the other. Find the number of different signals consisting of nine flags that can be made using three white flags, five red flags, and one blue flag.

_____7. A camp counselor and six campers are to be seated along a picnic bench. In how many ways can this be done if the counselor must be seated in the middle and a camper who has a tendency to engage in food fights must sit to the counselor's immediate left?

_____8. A four-person committee is to be elected from an organization's membership of 11 people. How many different committees are possible?

_____9. How many distinct permutations can be formed using the letters of the word TENNESSEE?

_____10. There are three highways from city A to city B, two highways from city B to city C, and four highways from city C to city D. How many different highway routes are there from city A to city D?

_____11. Fifty people purchase raffle tickets. Three winning tickets are selected at random. If first prize is $1000, second prize is $500, and third prize is $100, in how many different ways can the prizes be awarded?

_____12. Suppose you are asked to list, in order of preference, the three best movies you have seen this year. If you saw 20 movies during the year, in how many ways can the three best be chosen and ranked?

_____13. Of the 100 people in the U.S. Senate, 18 serve on the Foreign Relations Committee. How many ways are there to select Senate members for this committee (assuming party affiliation is not a factor in the selection)?

_____14. A car model comes in nine colors, with or without air conditioning, with or without a sun roof, with or without automatic transmission, and with or without antilock brakes. In how many ways can the car be ordered with regard to these options?

_____15. A mathematics exam consists of 10 multiple-choice questions and 5 open-ended problems in which all work must be shown. If an examinee must answer 8 of the multiple-choice questions and 3 of the open-ended problems, in how many ways can the questions and problems be chosen?

_____16. In a production of West Side Story, eight actors are considered for the male roles of Tony, Riff, and Bernardo. In how many ways can the director cast the male roles?

_____17. To win in the New York State lottery, one must correctly select 6 numbers from 59 numbers. The order in which the selection is made does not matter. How many different selections are possible?

_____18. How many arrangements can be made using four of the letters of the word COMBINE if no letter is to be used more than once?

_____19. A social security number contains nine digits, such as 074-66-7795. How many different social security numbers can be formed?

_____20. How many different committees can be formed from 5 professors and 15 students if each committee is made up of 2 professors and 10 students?