

MA 110 WORKSHEET (7.3)

Name _____

1. Noting that there are 26 letters in the English alphabet and 10 digits. How many different license plates can a state make if each license plate contains:
 - A. 7 different digits?
 - B. 7 digits with repeats permitted?
 - C. 3 letters followed by 3 digits, repeats permitted?
2. Suppose a person planning a banquet cannot decide how to seat 6 guests at the head table. How many ways can they be seated in the 6 chairs on one side of the table?
3. Eight horses are entered in a race. How many ways can the horses finish?
4. The call letters for radio stations must begin with K or W followed by any 3 additional letters. How many sets of call letters are possible?
5. How many different outfits can be formed from
 - A. 4 pairs of pants and 6 shirts?
 - B. 4 pairs of pants, 6 shirts, and 3 sweaters?

6. An automobile manufacturer produces 7 models, each available in 6 different colors. In addition, the buyer can choose one of 4 different upholstery fabrics and one of 5 different colors for the interior. How many varieties can be ordered from the manufacturer?
7. How many different ways can 10 questions on a true-false test be answered?
8. How many different arrangements can be made with the letters, M, A, T, H, if:
 - A. each letter can be used only once?
 - B. each letter can be used more than once?
9. How many 7-digit telephone numbers can be formed if the first digit cannot be a 1 or 0?
10. How many different 7-digit telephone numbers begin with 587 or 589?
11. How many 3-letter code words can be formed if the middle letter must be a vowel?
12. Make up your own counting problem and solve it.