

Math 270 - Basic Discrete Mathematics
Practice Quiz on Section 9.2

Solutions

Directions: Answer the problem given below.

1. A state decides that its license plate numbers will each consist of 7 characters: a nonzero digit from 1-9, followed by three upper-case Roman letters (from A-Z), followed by three more digits from 0-9. For example, 4CAR302 is one possibility.

a. How many license plates are there in total?

Pick from left-to-right : $9 \cdot 26 \cdot 26 \cdot 26 \cdot 10 \cdot 10 \cdot 10 = 158,184,000$

b. How many license plates are there that use distinct digits (though letters may repeat)?

Pick from left-to-right : $9 \cdot 26 \cdot 26 \cdot 26 \cdot 9 \cdot 8 \cdot 7 = 79,724,736$

c. How many license plates are there that don't use any of the letters R, S, T, L, N, E?

Pick from left-to-right : $9 \cdot 20 \cdot 20 \cdot 20 \cdot 10 \cdot 10 \cdot 10 = 72,000,000$

d. How many license plates have the same first and last digit?

Pick from left-to-right : $9 \cdot 26 \cdot 26 \cdot 26 \cdot 10 \cdot 10 \cdot 1 = 15,818,400$
↑
same as 1st