

SOLUTIONS FOR QUIZ 3

How many license plates can be made using either three letters followed by three digits or four letters followed by two digits?

Note: this is Exercise 5.1.28 from the homework.

Denote by n_1 (n_2) the number of license plates made up of three letters, followed by three digits (respectively, four letters, followed by two digits). By the product rule, $n_1 = 26^3 \cdot 10^3$ (26 ways to pick each of the three letters, 10 ways to pick each of the three digits), and $n_2 = 26^4 \cdot 10^2$. By the sum rule, the total number of possible license plates equals $n_1 + n_2 = 26^3 \cdot 10^3 + 26^4 \cdot 10^2$.

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