

Quiz #11

SOLUTIONS

1. { 10 points } **How many license plates can be made using either one or two letters followed by either three or four digits.**

Write the answer as a numerical expression. There is no need to calculate the result.

There are two cases for the letter part of the plate – to contain one letter (26 possibilities) or to contain two letters (26^2 possibilities). That makes a total of $26 + 26^2$ possibilities. Analogously, there are $10^3 + 10^4$ possibilities for the digit part. Since both parts are independent, the total number of possibilities is

$$\begin{aligned} & (26 + 26^2)(10^3 + 10^4) \\ &= (26 + 676)(1000 + 10000) = (702)(11000) = 7,722,000 \end{aligned}$$