

# Answer Key

Name \_\_\_\_\_

Section \_\_\_\_\_

MA 162 Quiz 7 October 30, 2014

In recent years, the state of California issued license plates using a combination of one letter of the alphabet followed by three digits, followed by another three letters of the alphabet. How many different license plates can be issued using this configuration?

Recall that there are 26 letters in the alphabet & 10 digits (0-9). To solve this problem we will use the generalized multiplication principle. Think of each alphanumeric entry on the licence plate as an individual task. So  $T_1 = T_5 = T_6 = T_7 = 26$  and  $T_2 = T_3 = T_4 = 10$ . The total number of different licence plates are

$$T_1 \cdot T_2 \cdot T_3 \cdot T_4 \cdot T_5 \cdot T_6 \cdot T_7 = 26 \cdot 10 \cdot 10 \cdot 10 \cdot 26 \cdot 26 \cdot 26 = (10)^3 (26)^4 \\ = 456,976,000$$