

FCS Midterm Answers Q3

3.

All possibilities = $36 \times 35 \times 34 \times 33 \times 32 \times 31$

Because 26 lowercase letters + 10 digits, and no repeat on digits, hence reduce one each time.

Not in range (requirements):

- 0 letters - meaning 6 non-repeat digits = $10 \times 9 \times 8 \times 7 \times 6 \times 5$
- 1 letter - meaning 1 from the 26 lowercase letters and other 5 non-repeat digits = $6 \times 26 \times 10 \times 9 \times 8 \times 7 \times 6$, times 6 at the beginning because the lowercase letter has six spots to choose from (or to be in)
- 0 digits - meaning 6 lowercase letters = 26^6

All possibilities - Not in range (requirements) = $36 \times 35 \times 34 \times 33 \times 32 \times 31 - 10 \times 9 \times 8 \times 7 \times 6 \times 5 - 6 \times 26 \times 10 \times 9 \times 8 \times 7 \times 6 - 26^6 =$
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