(a) A security code consists of six digits chosen at random from the digits 0 to 9 . The code may begin with zero and digits may be repeated.

For example | 0 | 7 | 1 | 7 | 3 | 7 |
| :--- | :--- | :--- | :--- | :--- | :--- | is a valid code.

(i) Find how many of the possible codes will end with a zero.

(ii) Find how many of the possible codes will contain the digits 2018 together and in this order.

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(b) Find $a, b, c$, and $d$, if $\frac{(n+3)!(n+2)!}{(n+1)!(n+1)!}=a n^{3}+b n^{2}+c n+d$, where $a, b, c$, and $d \in \mathbb{N}$.

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| $a=$ | $b=$ | $c=$ | $d=$ |
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