Mathematical Statistics 2018/2019, Homework 1

Name and Surname ..... Student's number .....

In the problems below, please use the following: as k ***– the sum of digits in your student's number; as*** m ***– the sum of the two largest digits in your student's number; and as*** n ***– the smallest digit in your student's number plus 1. For example, if an index number is*** 609999***:*** $k = 42$***,*** $m = 18$***,*** $n = 1$***.***
Please write down the solutions (transformations, substitutions etc.), and additionally provide the final answer in the space specified (the answer should be a number in decimal notation, rounded to four digits).

1. The growth of average gross wage levels between the year $2000 + n$ and 2018 was analyzed. Between $2000 + n$ and 2008, the wages increased by $k\%$. In the period 2009-2010, they decreased by $n\%$ yearly. In the period 2011-2018, they increased by $\frac{m}{4}\%$ yearly. (1) Calculate the average yearly growth rate of wages for the studied period. (2) Knowing that in 2018 the average gross wage level was equal to m thousand crowns, provide the value of the average gross wage level in the year $2000 + n$. (3) Knowing that in 2018 the average gross wage level was equal to m thousand crowns, predict the average wage level in the year $2019 + n$ (assume that in the future, the wages will grow at the same rate as on average in the analyzed period).

ANSWER:

Avg. growth rate:	Wage in $2000 + n$:	Wage in $2019 + n$:

Solution: