Problem 1/3

In Table 1 there are given data about the full- time students in tertiary education in 2016 and 2017 (source: Ministry of Education, Youth and Sports of the Czech Republic).

Table 1: Students in tertiary education in the Czech Republic in 2013

year	**2015**		**2017**	
group	total	bachelor	total	bachelor
students total	291 346	179 156	283 253	173 073
women	161 438	96 599	157 465	93 864

Questions:

1. Compare (evaluate and interpret results) the number of women and men in tertiary education in the Czech Republic in 2017 (in total, bachelor level and higher levels).
2. Can you characterize the absolute and the relative difference in total number of tertiary students in the Czech Republic between years 2015 and 2017?

Problem 2/3

In Table 2 there are the group arithmetic means and standard deviations for a firm with 50 employees.

Table 2: Characteristics of income in a firm

income	**number of employees**	**mean income (CZK)**	**standard deviation (CZK)**
tertiary	10	35 000	4 000
others	40	22 000	7 000

Questions:

1. Evaluate the mean income of all employees in the firm.
2. Quantify the variability of income of all employees in the firm.

Problem 3/3

Econometric software GRETL was used for the estimation of single variable regression model (see defined variables and output below).

DATA: Aggregate personal income and expenditures on health care, 1993, for U.S. States and D.C.

Questions:

1. Write down the estimated regression function and interpret the values of the estimated parameters.
2. Comment the results of tests of individual parameters (significance level - 5%):
3. Comment the statistical quality of the model.

Variables used in the model:

exphlth aggregate personal expenditure on health care ($ billions)

income aggregate personal income ($ billions)

Estimated model:

Model 1: OLS, using observations 1-51

Dependent variable: exphlth

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	0.325608	0.319742	1.0183	0.31352	
income	0.142099	0.00196623	72.2698	<0.00001	***

Mean dependent var	15.26494	S.D. dependent var	17.88771
Sum squared resid	148.6985	S.E. of regression	1.742029
R-squared	0.990705	Adjusted R-squared	0.990516
F(1, 49)	5222.924	P-value(F)	1.90e-51
Log-likelihood	−99.65329	Akaike criterion	203.3066
Schwarz criterion	207.1702	Hannan-Quinn	204.7830