

Statistics II in English

Exercises from *Übungsaufgaben und Lösungen zu Statistik I und II*

Part 5

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Exercise 10-1:

The number of employees at RAW Inc. between 1984 and 1990 followed the following function: $\hat{x} = 983 - 9t$.

1. Is this trend function complete? Complete it reasonably if necessary, using the information that in 1986 the number of employees was 990 and in 1990 it was 957.
2. Interpret the trend parameters for this particular problem.

Exercise 10-3:

Inventories on a regular basis registered in a cooling house the following quantities of ice cream (in kg):

Time	1987		1988		1989		1990		1991
	1.1.	1.7.	1.1.	1.7.	1.1.	1.7.	1.1.	1.7.	1.1.
Quantity	90	121	108	143	126	165	144	187	162

1. Determine the appropriate trend function.
2. Set up an appropriate trend-season-model. (Round the trend parameters: the constant to a multiple of ten, the slope to an integer.)
3. Interpret the results of 1) and 2).
4. For convenience, the 1. January 1985 is a posteriori set to time $t = 0$. The time unit shall be one year. Determine the new design of the model.
5. What inventories are to be expected for the 1st July 1991?

Exercise 10-11:

The following table contains the prices of a certain company's stocks for the year 1992.

Month	1	2	3	4	5	6	7	8	9	10	11	12
Price	85,2	85,5	83,6	85,8	86,0	82,8	79,4	80,4	77,4	74,9	76,6	80,5

1. Determine the trend of the stock prices with the help of the moving average of order 3 and 4 respectively.
2. Determine the linear trend function.