22) The weight of cows depending on age can be modelled with the Brody growth curve.

$$Weight_i = A - (A - Weight_0)e^{-k(Age_i - Age_0)}$$

$Weight_i$ ... estimated weight at Age_i

A ... asymptotic mature weight

$Weight_0$ ... estimated initial weight at Age_0

k ... maturing rate index

The weight of some cows at ages from 8 to 108 months is presented in the table below.

Weight [kg]	280	340	430	480	550	580	590	600	590	600
Age [months]	8	12	24	36	48	60	72	84	96	108

Use a non-linear regression model to estimate the parameters based on the sample above. The asymptotic mature weight can be estimated by the weight of the oldest cow and the initial weight can be estimated by the weight of the youngest cow.

23) The electricity consumption in kilowatt-hours per month and the area in square feet of ten houses are given in the table below.

Elect. Consumpt.	1290	1350	1470	1600	1710	1840	1980	2230	2400	2930
Area	1182	1172	1264	1493	1571	1711	1804	1840	1956	1954

Use the sample data of these ten houses to fit an appropriate regression model to predict electricity consumption based on the area of a house.