(old) task

BODY MASS INDEX SL TYPE II

Body mass index (BMI) is a measure of one's body fat. It is calculated by taking one's weight (kg) and dividing by the square of one's height (m).

The table below gives the median BMI for females of different ages in the US in the year 2000.

Age (yrs)	BMI
2	16.40
3	15.70
4	15.30
5	15.20
6	15.21
7	15.40
8	15.80
9	16.30
10	16.80
11	17.50
12	18.18
13	18.70
14	19.36
15	19.88
16	20.40
17	20.85
18	21.22
19	21.60
20	21.65

(Source: http://www.cdc.gov)

Using technology, plot the data points on a graph. Define all variables used and state any parameters clearly.

What type of function models the behaviour of the graph? Explain why you chose this function. Create an equation (a model) that fits the graph.

On a new set of axes, draw your model function and the original graph. Comment on any differences. Refine your model if necessary.

Use technology to find another function that models the data. On a new set of axes, draw your model function and the function you found using technology. Comment on any differences.

Use your model to estimate the BMI of a 30-year-old woman in the US. Discuss the reasonableness of your answer.

Use the Internet to find BMI data for females from another country. Does your model also fit this data? If not, what changes would you need to make? Discuss any limitations to your model.