

- 5 Scientists are comparing h , the average height of a child in cm, with t , the age of the child in years. They suggest the model $h = at + b$ for $t \geq 2$, where a and b are constants.

They find that the average height of a 2 year old child is 87 cm and the average height of a 5 year old child is 108 cm.

- (a) Find the values of a and b that are consistent with the scientists' findings. [4]

- (b) (i) Sam is 4 years old.

Use the model to predict Sam's height. [2]

- (ii) Comment on the accuracy of this prediction. [1]

- (c) Suggest **one** possible limitation of this model when predicting the average height of a 12 year old child. [1]