

Author: Sumayyah Noor

This step-by-step solution guide has been created by **Sumayyah Noor** for educational purposes. While we have made every effort to ensure the accuracy of the information presented, it is possible that there may be errors or omissions. We encourage users to critically evaluate and verify the content. BF Maths and the author cannot be held responsible for any errors or inaccuracies in this guide.

If you find any mistakes or have any suggestions for improvements, please contact us at bfmathshello@gmail.com. Your feedback is invaluable in helping us maintain the quality and accuracy of our resources. Please specify *which exercise and which question* in the email.

Thank you for using BF Maths for your maths revision!

4.2 Linear regression

- 1a. Graph A
- 1b. Graph C
- 1c. Graph B

2a. The initial mass is 3.56g

b. The mass of the coin decreases by -0.012g every hour

3a. $y = 50 + 20x$

when $x = 12$

$$y = 50 + 20(12)$$

$$y = 290 \times 1000$$

$$y = 290000$$

b. The increase in value of an office block for each additional office

c. This is not likely to be the case as buildings with no offices does not fit the pattern of his data as they will not be office blocks.

4a. 3 is the initial mass of the chipmunk, so the mass at birth
4.5 is the mass the chipmunk increases each day

b. As it is outside the range of data

c. This is the regression line for x on t . You need to use regression line for t of x to predict age from mass.

5a. i. valid as it's within the range

ii. Invalid as it's out of range

b. This is the regression line for x on t . To predict age from mass, you would need the equation of the regression line for t on y .

c. The data shows some degree of linear correlation, which suggests that the linear regression model is a reasonable model of data.