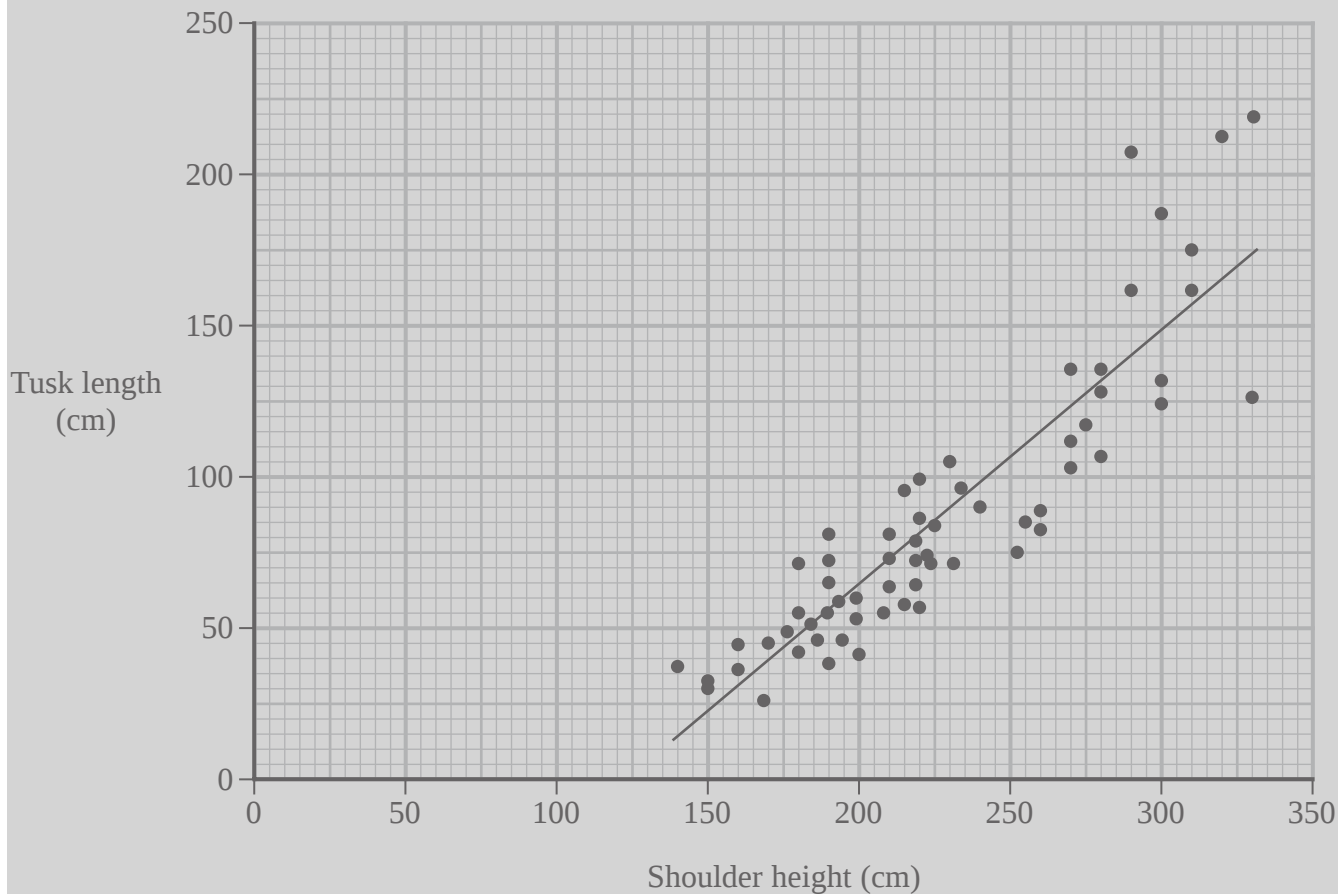


1. Scientists collected data for some African elephants.

Matthew is studying the relationship between elephant shoulder height, s cm, and tusk length, t cm.

He uses only the data for male elephants and draws the following scatter diagram using statistical software.



(a) Give an interpretation of the correlation between tusk length and shoulder height.

(1)

The equation of the regression line of t on s for these data is $t = 0.843s - 104$

(b) Give an interpretation of the gradient of this regression line.

(1)

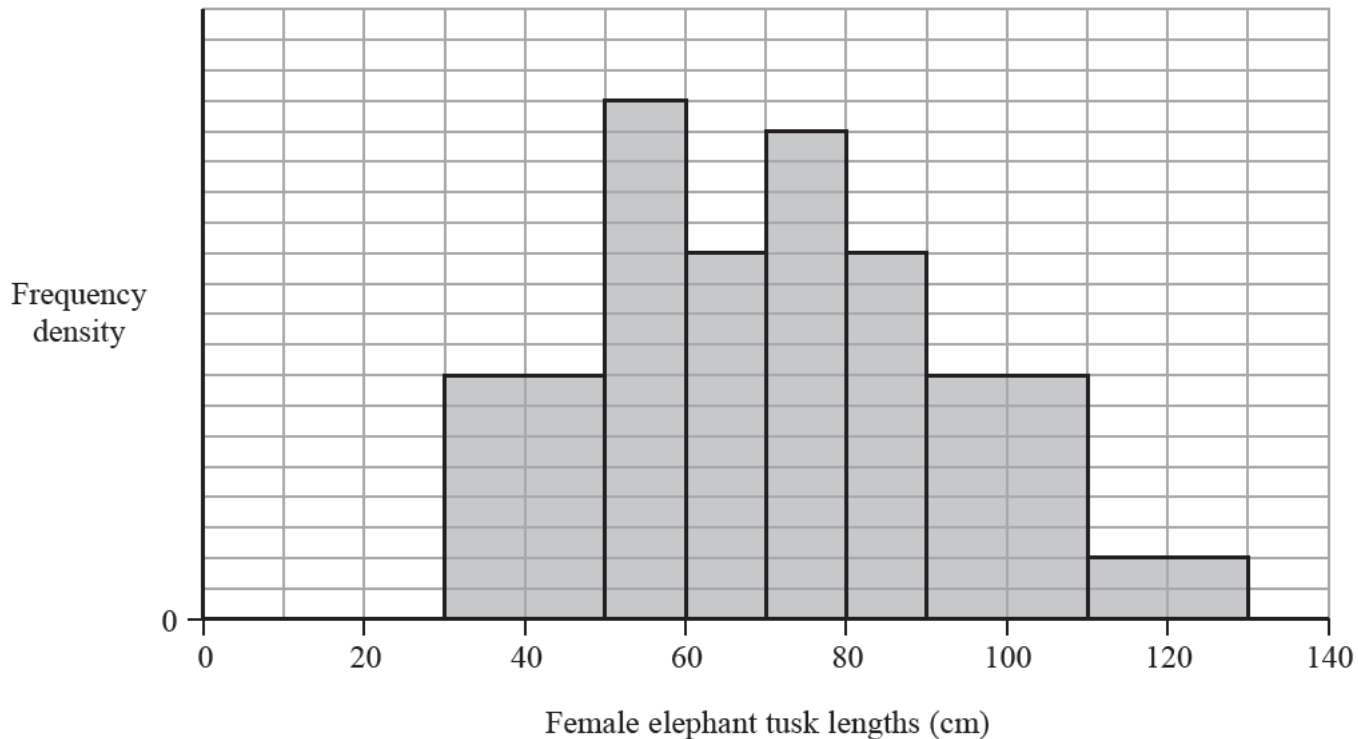
Matthew suggests using this regression line to draw conclusions about the relationship between elephant shoulder height and tusk length for **all** elephants.

(c) Explain why his suggestion may not be appropriate.

(1)

Question 1 continued

Matthew also draws the following histogram for the tusk lengths of female elephants.



(d) Estimate the percentage of female elephants with a tusk length of 75 cm to 100 cm.