Correlation

Colby Community College

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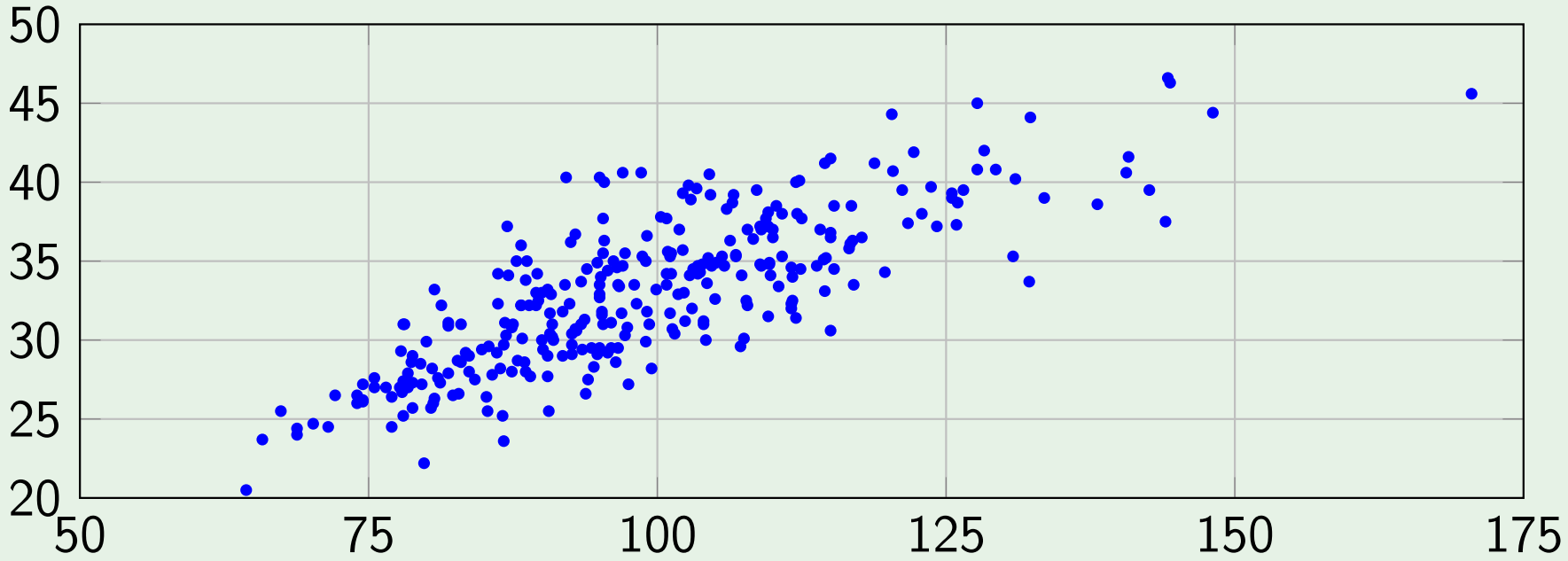
Note

Because conclusions based on visual examinations of scatterplots are largely subjective, we need more objective measures. We use the linear correlation coefficient r, which is a number that measures the strength of the linear association between the two variables.

Example 1



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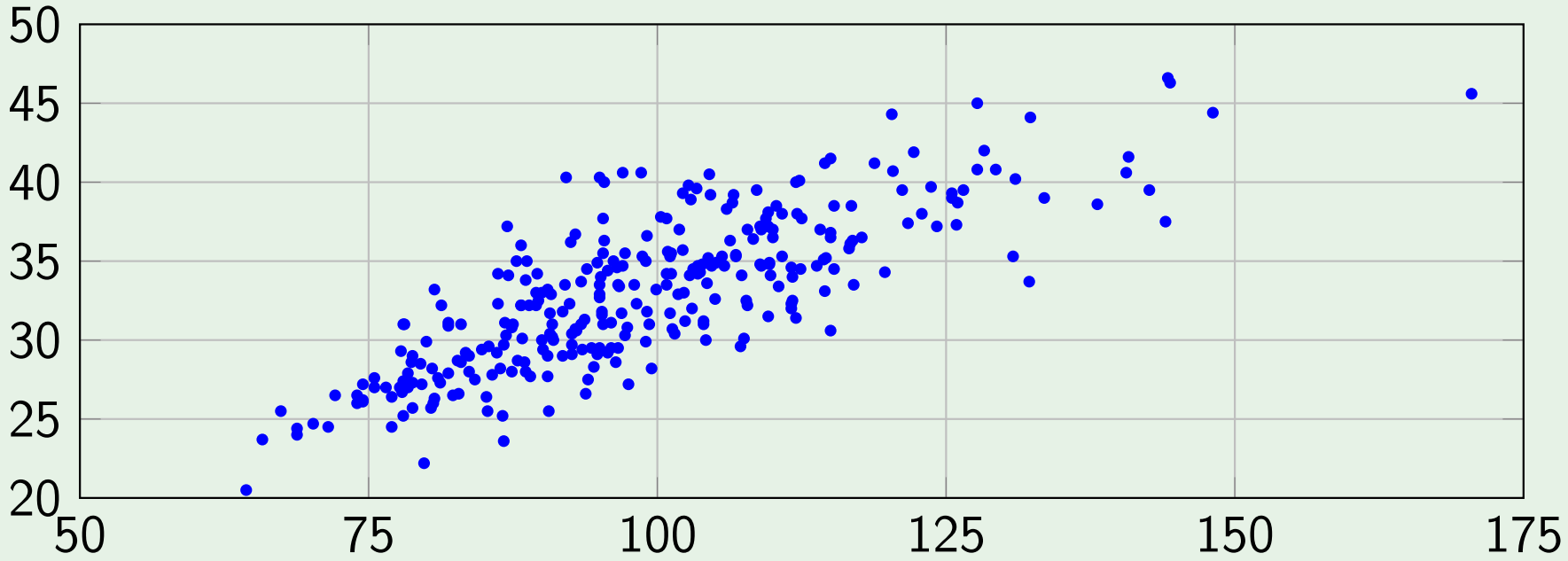
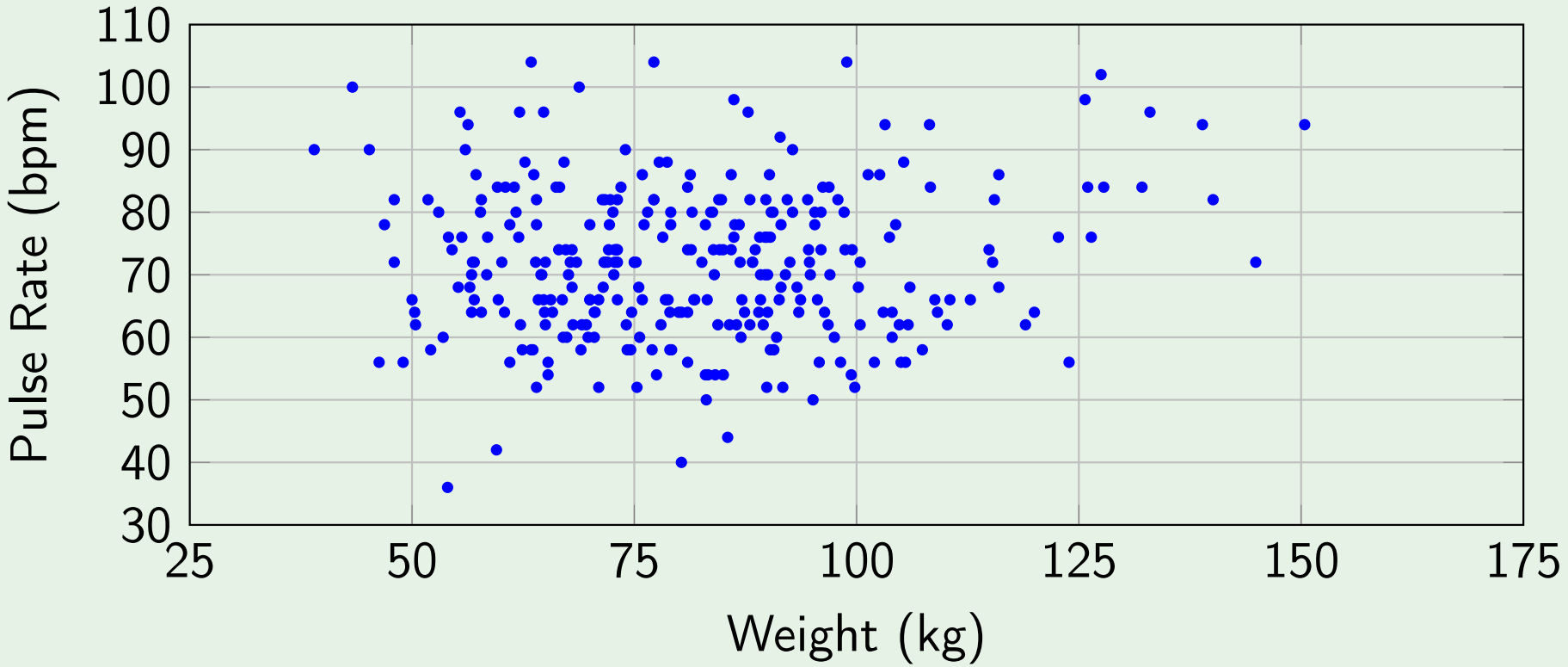


Distinct straight-line, or linear, pattern. We say that there is a positive linear correlation ($r = 0.80241$) between x and y, since as the x values increase, the corresponding y values also increase.

Example 2

Data Set 1 "Body Data" in Appendix B includes weights (kg) and pulse rates (bpm) of randomly selected adult subjects.



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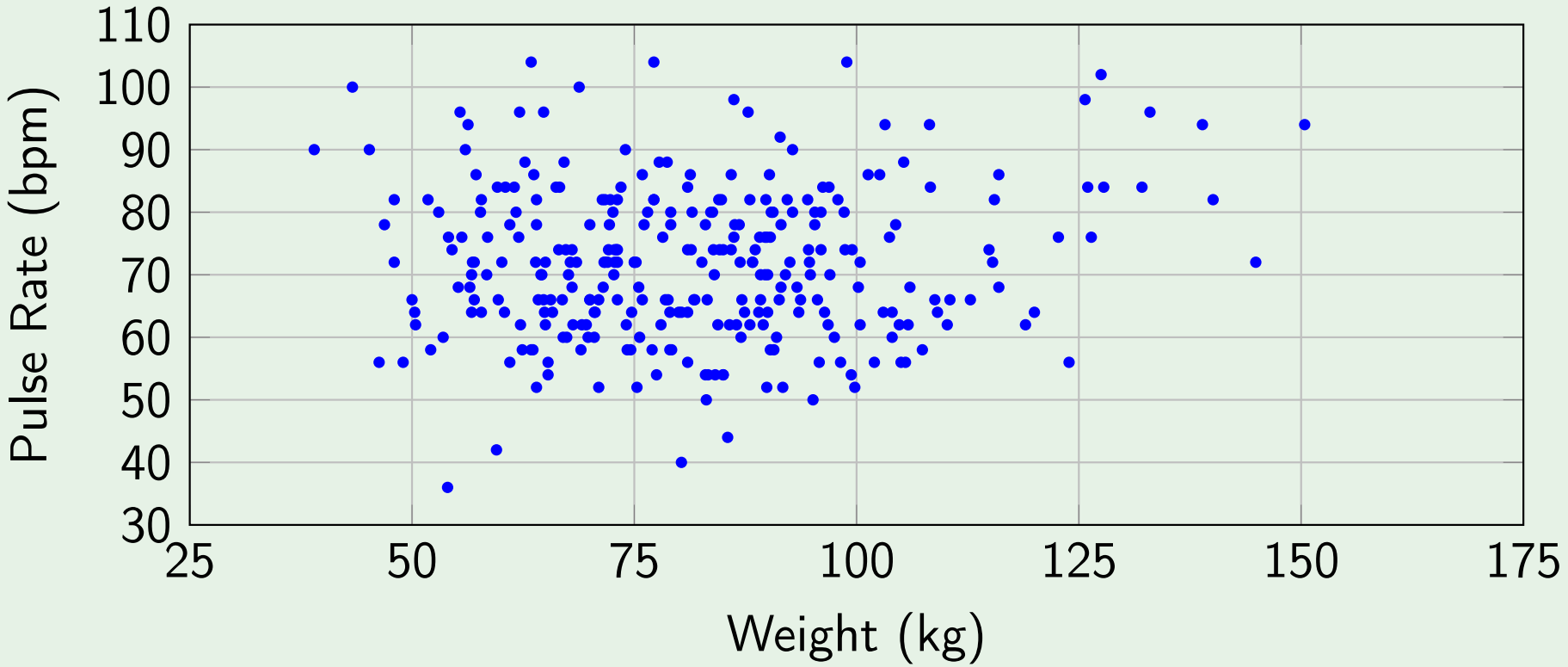

The points do not show any obvious pattern, and this lack of a pattern suggests that there is no relationship between weights and pulse rates.