

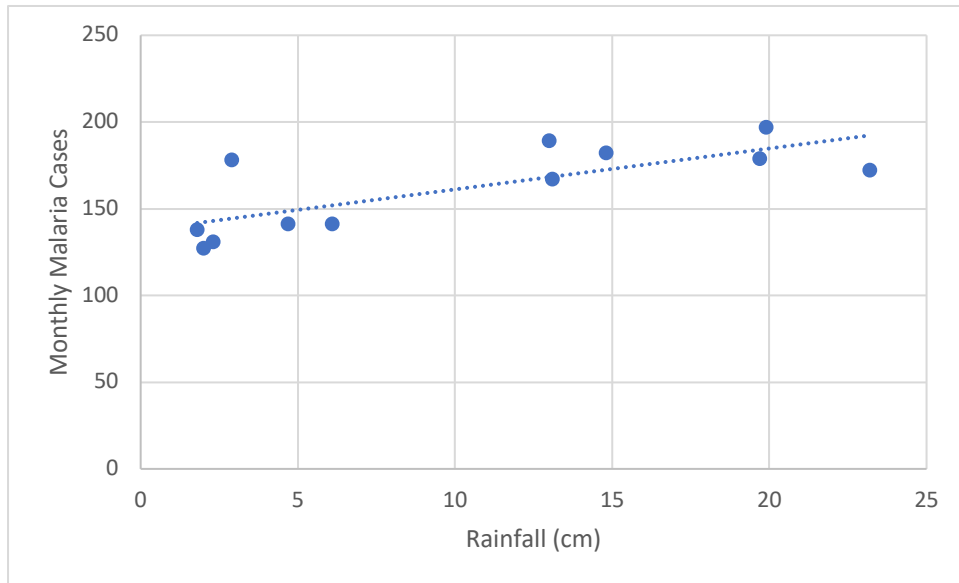
Using Linear Regression to Explore Environmental Factors Affecting Vector-borne Diseases

ASSESSMENT QUESTIONS

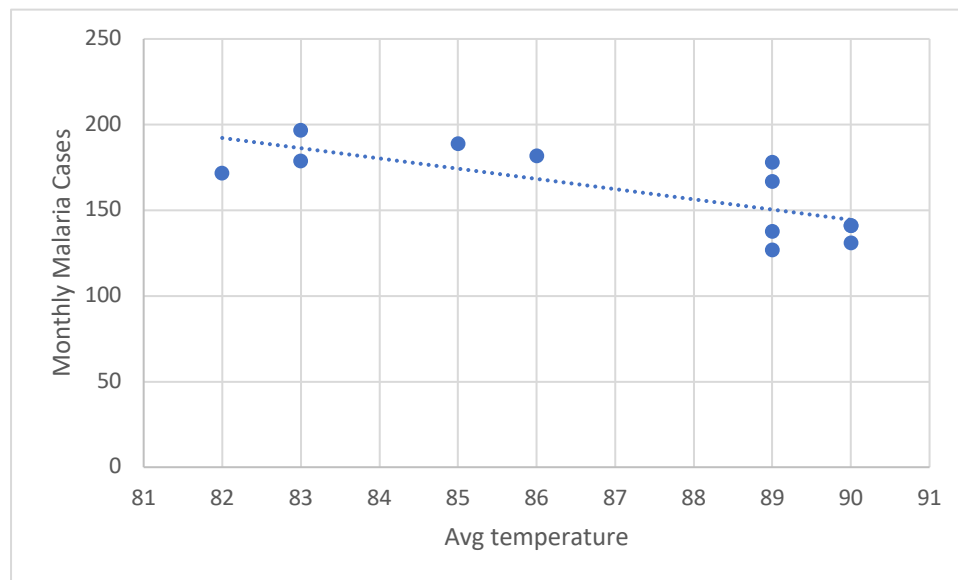
This document contains a series of open-ended assessment questions used for a final exam after students had completed the Linear Regression Affecting Vector-borne Diseases activity.

- Below are two graphs showing relationships between rainfall and monthly malaria cases (A) and temperature and monthly malaria cases (B). Please review these graphs then answer the questions below.

A. Correlation coefficient: 0.760



B. Correlation coefficient: -0.749



- i. Is there a strong correlation between either of these environmental factors and monthly malaria cases? If so, which one? Explain in detail
- ii. Why is the correlation coefficient for graph A positive while for graph B it is negative? Explain this, including what this means for the data.
- iii. Thinking about global climate change, if these areas are showing increased average monthly temperature, what might you predict will happen to monthly malaria cases? What if these increases in temperature are combined with drought (low rainfall) conditions?