REPLACE WITH A REPORT TITLE

███████████████████████

YOUR NAME HERE

Due March 21, 2025

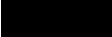**DELETE THESE INSTRUCTIONS BEFORE KNITTING AND SUBMITTING!**

Expectations for all assignments

1. Write in complete sentences. Use you own words and don't copy directly from your sources.
2. Clearly communicate all ██████████████████████ reasoning.
3. Include units for all numbers, as appropriate.
4. Annotate all figures with axes labels, legends, and captions as appropriate.
5. Comment every line of code so a non-R expert can understand your code.

Instructions for all take-home exams

This exam should be submitted as a PDF report (4-5 pages suggested). The report may be generated by Rmarkdown, but the style will be a technical report. The audience for your report is a ████████████████ who has not taken our class, read our textbook, or coded in R before. Therefore, the text of your report should not reference specific R commands, and should not depend on the reader having access to or being familiar with textbook examples or lecture notes. Acceptable resources include anything posted on our Moodle page, your own notes from class, your own R code, the textbook, and the course instructors. You *may not* search the internet, make use of AI, or consult people other than Prof. ██████.

Organize your report with the following sections:

- Title block with an informative report title, author, and date.
- Abstract that summarizes your report in 3-6 sentences.
- Introduction section that explains the ████████ question(s), the background information needed to place the question(s) in context, and the goal of the report. Include citations (e.g., the textbook, or references cited by the textbook) where appropriate. Put everything in your own words in 1-2 paragraphs, and do not plagiarize or directly quote the textbook.
- Methodology section that outlines your approach to answering the question. Explain the model assumptions (including the ████████ justification for those assumptions), model behavior (i.e., what happens when you change parameter values), and the data (including units).
- Results section that explains model calibration (e.g., parameter estimation) and other analyses (e.g., equilibria). All figures should have labels and captions that explain what's going on in the plot without needing to read the entire report. All reported numbers should include units.
- Discussion section that reflects on how well the model explains the data, how the model could be improved or expanded, and new questions for future work. *Hint: the textbook suggests "further exploration" that could inspire future questions.*
- References section that includes bibliographic information cited in the report (including the textbook). Any consistent citation style is fine.

Assignment prompt

Read Section 2.3 *Case Study 1: Island Biogeography*, and complete Exercises 2.10-2.16. These exercises will guide your report, but there should be no reference to individual exercises in the report. Be thoughtful in how you communicate your findings, and keep the audience in mind.

Abstract

Summarize your report in 3-6 sentences.

Introduction

Explain the ▮▮▮▮▮▮ question(s), the background information needed to place the question(s) in context, and the goal of the report. Include citations (e.g., the textbook, or references cited by the textbook) where appropriate. Put everything in your own words in 1-2 paragraphs, and do not plagiarize or directly quote the textbook.

Methodology

Outline your approach to answering the question(s). Explain the model assumptions (including the ▮▮▮▮▮▮ justification for those assumptions), the model, the model behavior (i.e., what happens when you change parameter values), and the data (including units).

Results

Explain the model calibration (e.g., parameter estimation) and other analyses (e.g., equilibria). All figures should have labels and captions that explain what's going on in the plot without needing to read the entire report. All reported numbers should include units.

```r
# YOUR CODE HERE (you may need to have multiple code blocks)

# For figures, include a subtitle that explains the plot (example below)
x = 1:10  # made up data
y = 21:30 # more made up data
# Plot with a caption
plot(x,y,xlab="x variable", ylab="y variable",
     sub="Figure 1: A consise but thorough description of the plot")
```
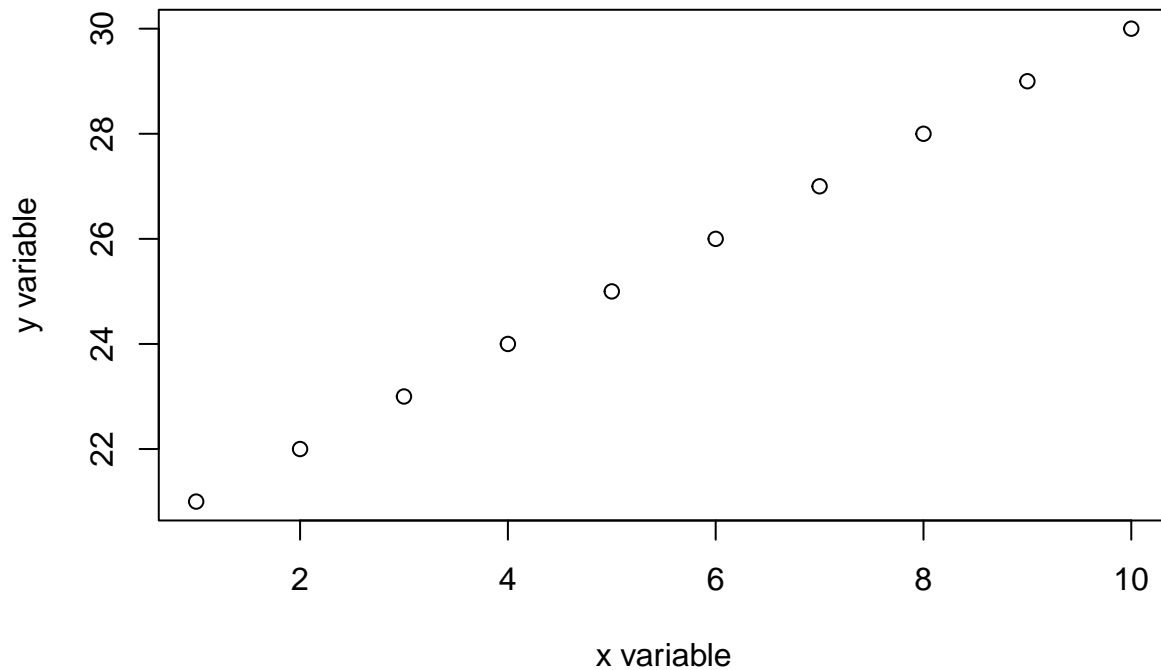
Figure 1: A consise but thorough description of the plot

Discussion

Reflect on how well the model explains the data, how the model could be improved or expanded, and new questions for future work. The textbook suggests some further exploration that could inspire future questions.

References

Include bibliographic information cited in the report (including the textbook). Any consistent citation style is fine.

Honor Code Pledge

"I pledge my honor that on this examination I have neither given nor received assistance not explicitly approved by the professor and that I have seen no dishonest work."

Signature:

-or-

I have intentionally not signed the pledge: