Stat 302: Assignment 1

Fall 2022

Q1: 1.2 (textbook question, page 51)

Q2: Consider the following output which predicts mean sea surface temperature from mean coral growth.

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	30.050	1.293	23.234	2.03e-05 ***
Growth	-4.167	1.502	-2.774	0.0502 .

a. What is the slope of the least squares regression line?
b. Interpret the estimate of the slope in the context of this setting.
c. What is the size of the typical error when predicting mean sea surface temperature when mean growth is 0.89? (The observed mean surface temperature is 26.3 when mean growth is 0.89.)

Q3: Consider the fitted regression equation,

$\hat{y} = 58 - 0.7X$

If $x_1 = 20$ and $y_1 = 35$, what is the residual for the first data point.

Q4: 1.36 (textbook question, page 56, dataset can be found in the zipped folder)

- Show your workings along with your answers (R code, R outputs and answers / Interpretations)

Q5: 2.8 (textbook question, page 77)

Q6: 2.16 (textbook question, page 78, dataset can be found in the zipped folder)

- Show your workings along with your answers (R code, R outputs and answers / Interpretations)