Exam 2

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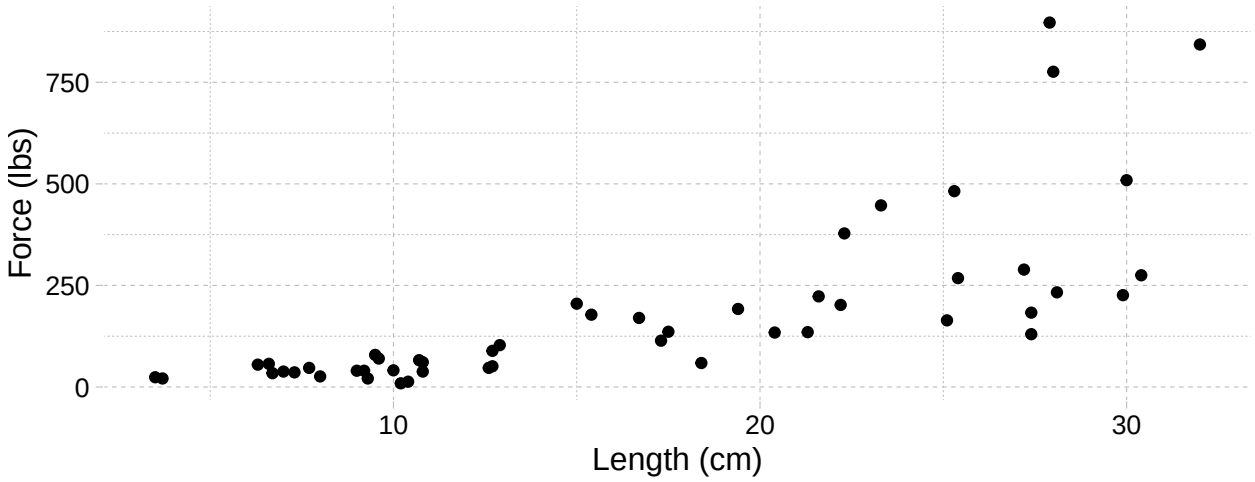
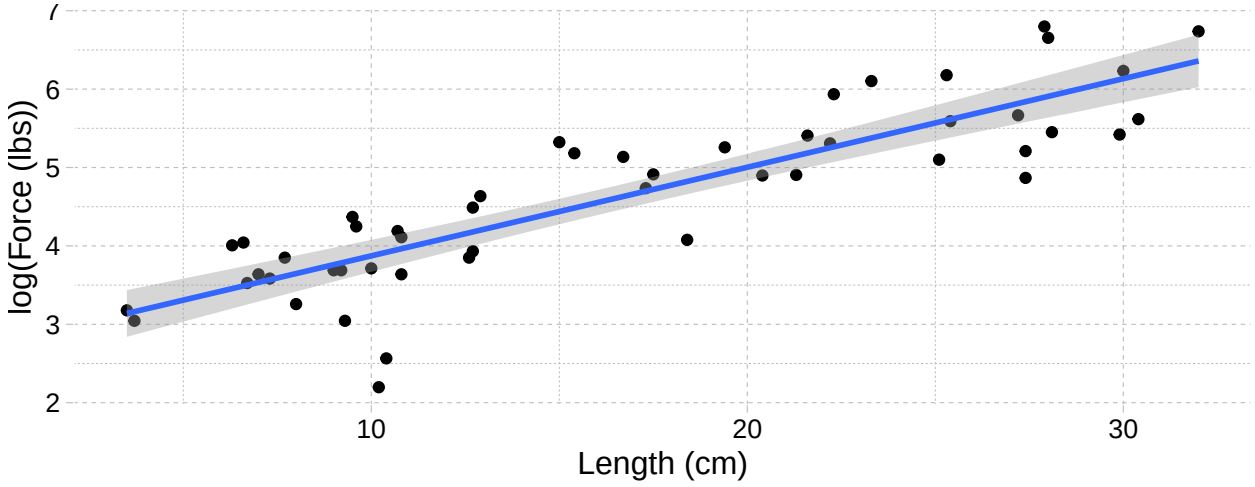
The first thing to do is to look at a scatterplot of the data:



A log transformation of the *y*-axis results in a more linear relationship:



And a table describing the regression model:

term	estimate	std.error	statistic	p.value
(Intercept)	2.74	0.177	15.46	0
length	0.11	0.010	11.85	0

This gives overwhelming evidence of a relationship between the claw length and force applied. With an R-squared value of 0.745, the model also explains a significant amount of the variance in the data. To re-state the model, we found:

$$\begin{aligned} \log(force) &= 2.74 + 0.11 \times length \\ force &= e^{2.74+0.11\times length} \\ &= 15.54 \times e^{0.11\times length} \end{aligned}$$