

3 Introduction to hypothesis testing

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You now know how to define and estimate parameters given a model. But the question remains: how reasonable is it to observe your data if a model is true? This question is addressed by hypothesis tests. They are the icing on the inference cake. After completing this chapter, you will be able to carefully construct and test hypotheses using hacker statistics.

Formulating and simulating a hypothesis	50 XP
Generating a permutation sample	100 XP
Visualizing permutation sampling	100 XP
Test statistics and p-values	50 XP
Test statistics	50 XP
What is a p-value?	50 XP
Generating permutation replicates	100 XP
Look before you leap: EDA before hypothesis testing	100 XP
Permutation test on frog data	100 XP
Bootstrap hypothesis tests	50 XP
A one-sample bootstrap hypothesis test	100 XP
A two-sample bootstrap hypothesis test for difference of means	100 XP

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