

PSY 628: Perceptual Processes
Homework 4: Signal Detection Theory
Due: Tuesday, 15 October at 5 pm

This homework has you gather data and apply signal detection theory to the data.

Use it to do the following.

1. On the class web page, the homework assignment includes a link to an online experiment. Complete the experiment and copy your trial-by-trial data to a spreadsheet. Use your data to compute the hit, false alarm, correction rejection, and miss rates for each of the three number-of-dots conditions.
2. For each number-of-dots condition, compute d' and bias. Note, if your Hit or False Alarm rate is 1.0 or 0.0, you will need to adjust it (otherwise, you get infinities when computing the percentiles). A common approach is to subtract $0.5/n$ from 1.0 and to add $0.5/n$ to 0.0, where n is the number of trials for a condition. The percentiles can be computed with most spreadsheets or in R. You might prefer a graphical interface like the one at https://yipstats.com/OnlineStatistics/chapters/calculators/inverse_normal_dist.shtml
3. Discuss how d' and bias change across the number-of-dots conditions. Why might they change the way they do?

Send your completed homework to Dr. Francis at gfrancis@purdue.edu