

# Notes on Statistics

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## 1 Data

### 1.1 The Plug-In Principle

The Plug-In Principle employs a fundamental construction:

Let  $x \rightarrow = (x_1, \dots, x_n)$  be a sample. The empirical probability distribution associated with  $x \rightarrow$ , denoted  $P_n$ , is the discrete probability distribution defined by assigning probability  $1/n$  to each  $\{x_i\}$ .

tr.155: Statistical inference is concerned with determining what the empirical distribution (the sample)