**Learning From Data Exercise 1.10**

For and , since all the three coins are fair coins,

Histogram of the distributions of

A picture containing screenshot

Description automatically generated

Estimates for as a function of , with Hoeffding bound

A close up of a map

Description automatically generated

and obey the Hoeffding bound, and does not obey the Hoeffding bound. As illustrated in the graph above, and are under the curve of Hoeffding bound and is above it. For and , the hypothesis is fixed, or in other words, pre-selected before the data set is generated. Therefore, they obey the Hoeffding bound. For , it is determined after the data is seen, or in other words, selected depending on the data. Therefore, does not obey the Hoeffding bound.