

# Study Notes

## *An Introduction of Probability Theory and Its Applications*

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## 1 The Sample Space

### 1.1 The Empirical Background

**Events** Events are the results of experiments or observations. The events should be distinguished between *compound(decomposable)* and *simple(indecomposable) events*. A compound event is an aggregate of certain simple events.

**Sample points** Sample points are just the simple events. Every indecomposable result of the (idealized) experiment is represented by one, and only one, sample point.

**Sample Space** Sample space is the aggregate of all sample points.

#### Notes

1. All intuitive background problems are abstractly equivalent to the scheme of placing  $r$  balls into  $n$  cells, in the sense that the outcomes differ only in their verbal description.  
There are some examples listed on P10.
- 2.