

Sampling Distributions

Interface among Nature → Measurement Operations → Prob & Stat Models

Processes in Nature

Measurement Operations

Statistical Models
(Random Variables)
(Populations)



Sampling Distribution overview



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Sample Statistic

Binomial Sampling Distribution

Process in Nature

Measurement Operations

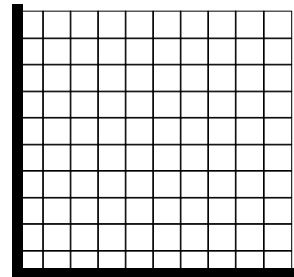
Statistical Model
(Random Variable)
(Population)

Birth

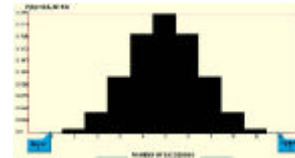
Gender

Prob dist of X

X =



1



4

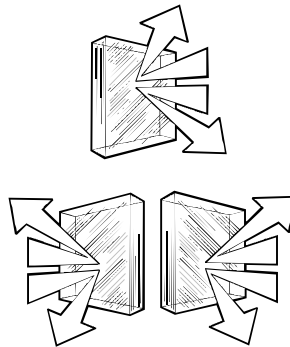
2 []

3

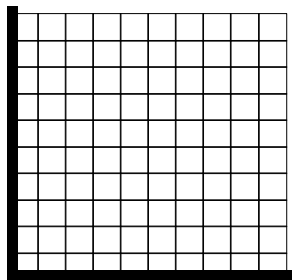
Why is this a good case for the Binomial Distribution?

Sampling Distribution of the Mean

Spatial Ability Quotient (SAQ)



Model SAQ as a $N(150,30)$



Process in Nature

Measurement Operations

Statistical Model
(Random Variable)
(Population)

Find the SDM

1



4

2 []

3 $M =$

Major conceptual points in defining SDM

If Population is Normal then...

Standard Error of the Mean (σ_M) $\sigma_M =$ Mean (μ) of SDM =

Relative shape of Population vs SDM



Two ways to conceptualize sampling a mean



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M =

StatCenter's SDM Tool

