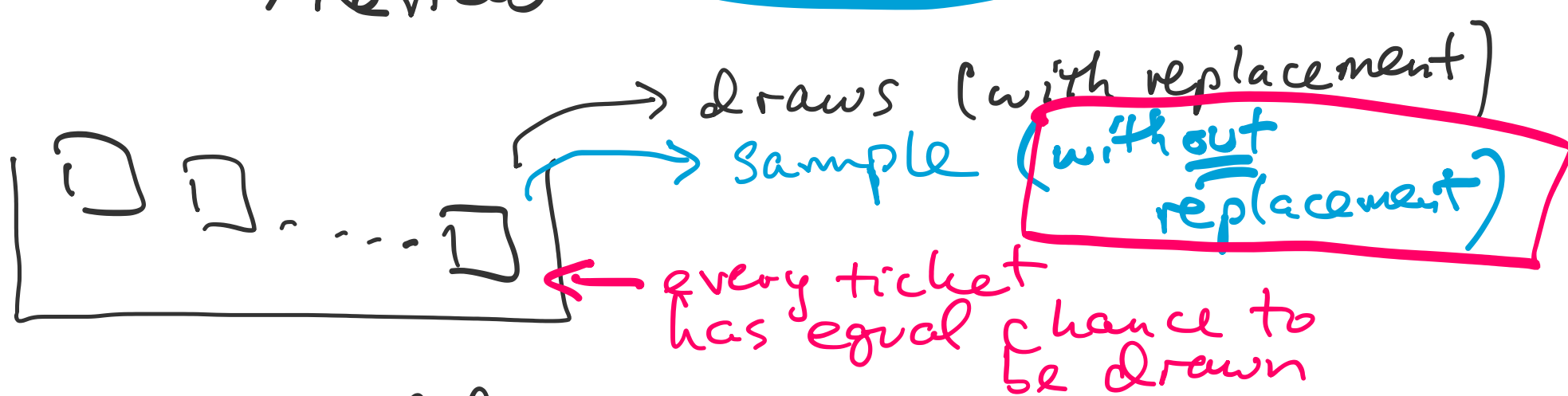


Exam 3: Can you see it on Canvas?  
Any trouble with the technology during the exam?

Ch 19 Overview/Review: 16, 17, 18, 19, 20, 21, 23 Sampling

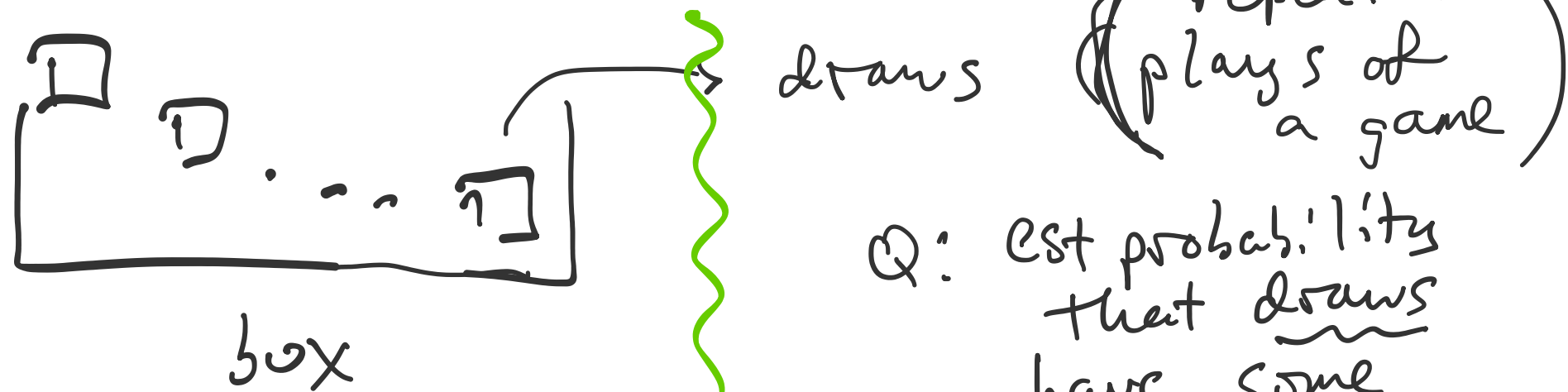


Box model  $\equiv$  Population

tickets in box  
numbers on each ticket

examples: dollar values  
for win/loss amount on bet  
1's, 0's only  $\equiv$  counting yes/no

remaining Ch's  
ht  
wt  
income  
educational level



Ch 16, 17, 18  
box contents known

parameter  
ave(box)  
SD(box)

Ch 19, 20, 21, 23  
box contents

Q: est probability that draws have some range unknown output  
Prediction

use  $\text{expected}(\text{sum}) = \text{ave}(\text{box}) \cdot \#(\text{draws})$   
 $\text{SE}(\text{sum}) = \text{SD}(\text{box}) \cdot \sqrt{\#(\text{draws})}$  (\*)

correction factor  
Ch 20

make estimates  
unknown  
ave(box) = ?  
SD(box) = ?

have: sample data

Inference

Statistics  
sum of draws  
ave of draws

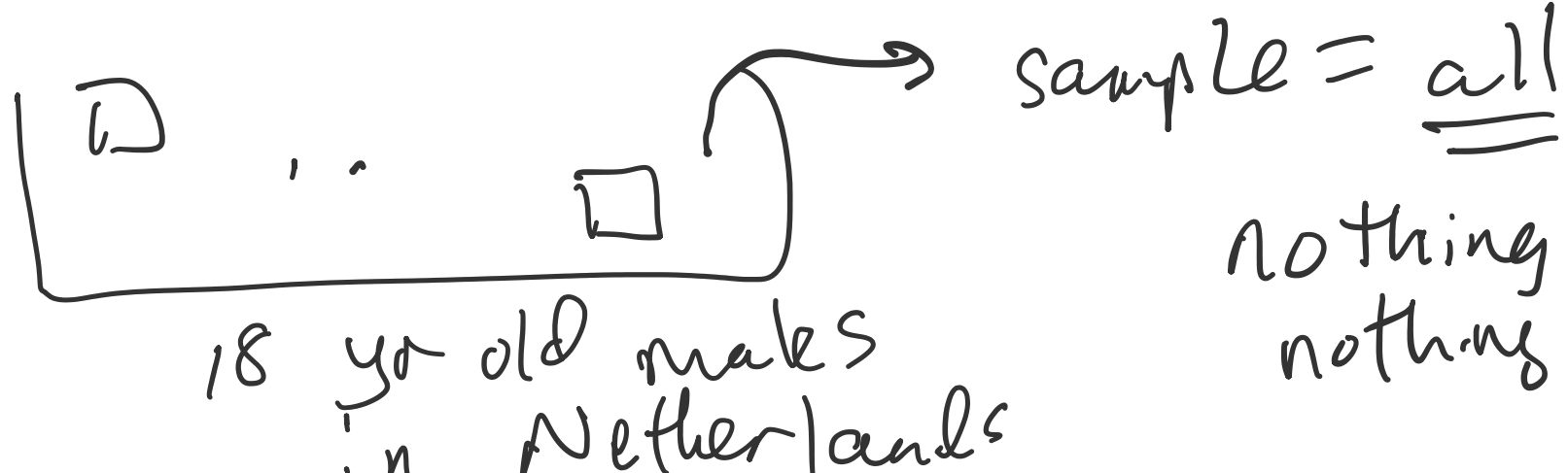
Prediction is using a known probability box model to find probabilities about sample values.

Inference is using sample statistics to estimate unknown parameters.

A 46.5

Rev 1, 10

A 46. "all men"...



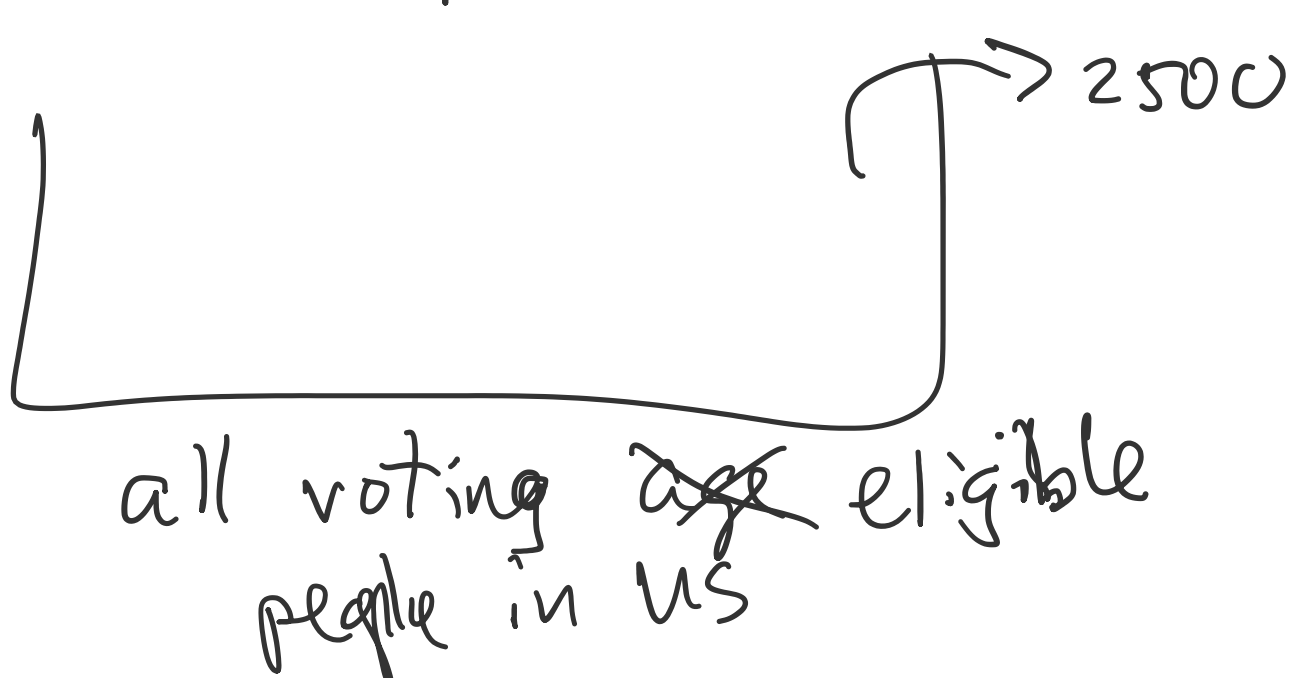
nothing unknown  
nothing to estimate

5. Yes! Bias.

Rev Ex 1

simple random sample  $\equiv$

random draws  
without replacement  
all +ix same chance to draw



Rev Ex 10



100 draws with replacement  
#H's in 100 flips  $\leftrightarrow$  sum of 100 draws



best strategy  
45, 46, ..., 55