classification
+ counting

1 2 3 4 5 6 7

content is an arbitrary collection of numbers

- inferring
  the mean of box

looked at the variability in sum of draws

what about the variability in the mean of draws?

25 draws with replacement.

expected value of sum

= \# draws x average of box

= \( 25 \times \frac{1+2+3+4+5+6+7}{7} \) = 100
Expected value of average = \frac{100}{25} = 4.

S.E. sum = \sqrt{\text{# draws}} \cdot SD\ box

SD\ box = \sqrt{\left[ (1-4)^2 + (2-4)^2 + (3-4)^2 + (4-4)^2 + (5-4)^2 + (6-4)^2 + (7-4)^2 \right]/7} = 2

SE sum = \sqrt{25 \times 2} = 10

SE average = \frac{10}{25} = 0.4

\frac{SD\ box}{\text{# draws}} = \frac{SD\ box}{\sqrt{\text{# draws}} = 4}
As the number of draws increases, the sample averages become more tightly peaked around the expected value.

Inference.

15,125 UCSC students

Population

What can I say about the mean GPA of all students in the population, based on my sample?