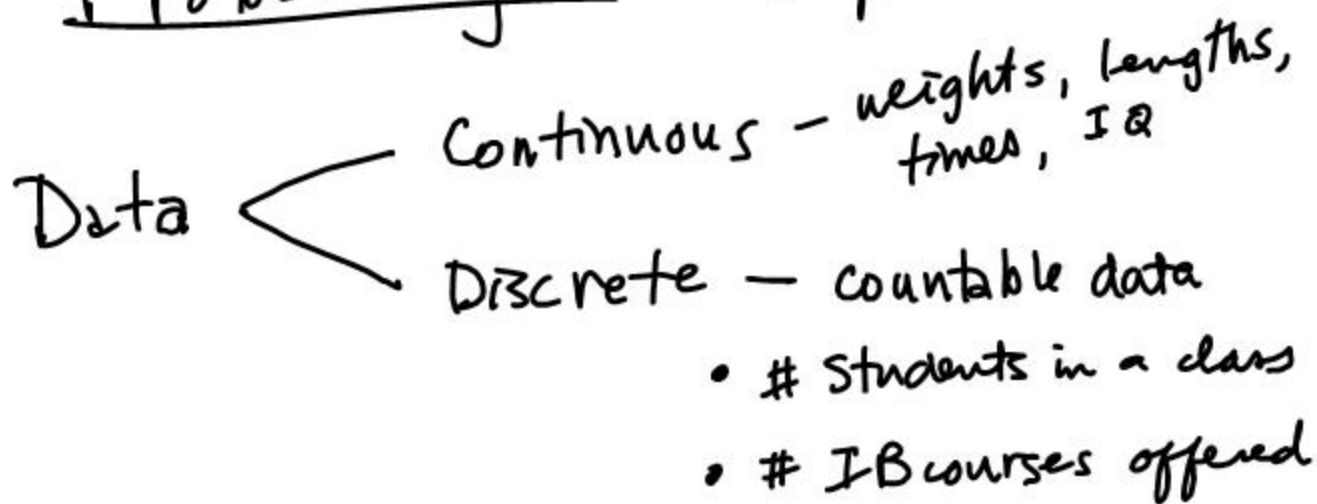
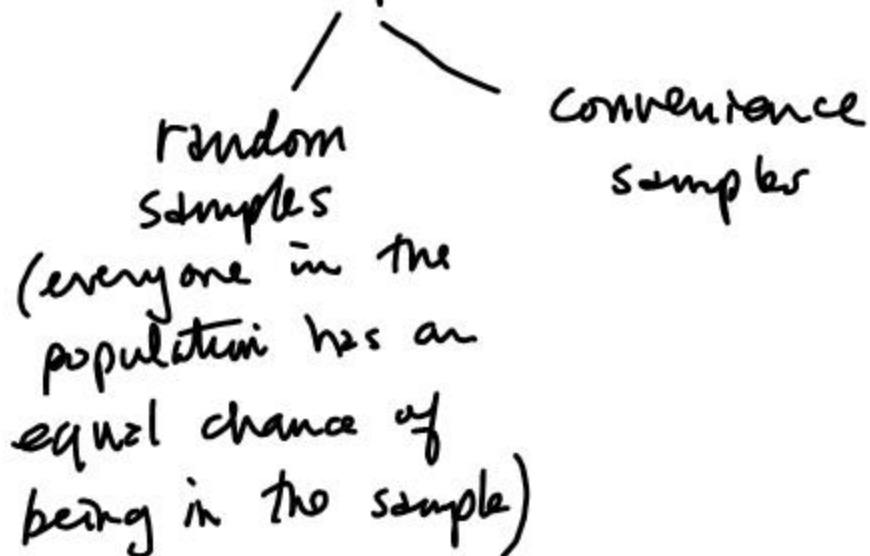


Probability Chapter 6



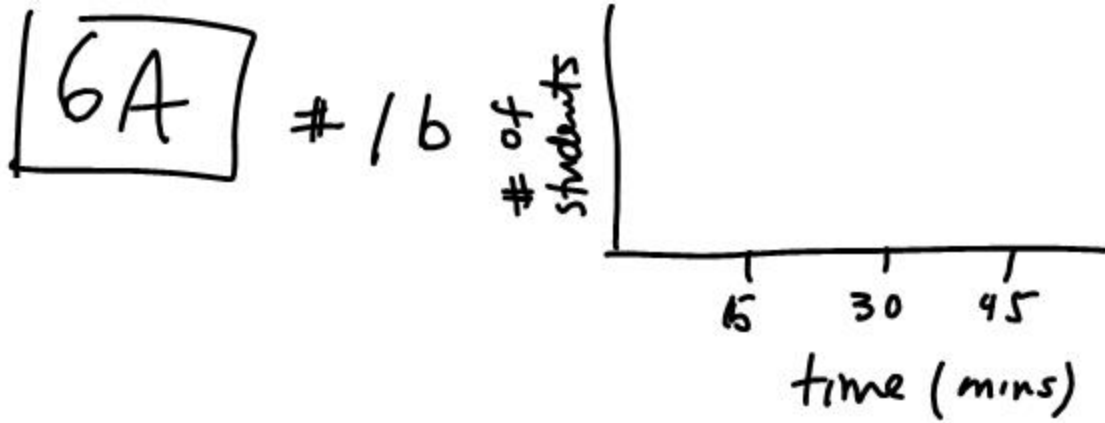
population data vs Sample Data



See p. 282

Frequency table → bar chart

Grouped frequency table → histogram



#2b. $5+4+3+2+3 = 17$

Describing
Summarizing Data sets

- 1) Measure of Central Tendency $\left\{ \begin{array}{l} \text{mean} \\ \text{median} \\ \text{mode} \end{array} \right.$
- 2) Measure of Dispersion (or spread)

- range = max - min
 - interquartile range = range of the middle 50%
 - standard deviation
 - variance
-

Quartiles

1st quartile (Q_1) is the 25% percentile

2nd quartile (Q_2) is the 50% percentile
or the median

3rd quartile = 75%

Ex. Data Set: 4, 5, 6, 6, 9, 12, 18, 19, 19, 25

$Q_1 = 6$ (median of the values less than
the median of
the whole set)
 $Q_2 = \frac{9+12}{2} = 10.5$
 $Q_3 = 19$

Computing Standard Deviation

EX Data Set: 4, 6, 10, 12

deviation from the mean

X	$X - \mu$	$(X - \mu)^2$
4	-4	16
6	-2	4
10	2	4
12	4	16

mean:

$$\mu = \frac{4+6+10+12}{4}$$

$$\mu = 8$$

average of squared deviation: $\frac{16+4+4+16}{4}$

$$= \text{variance} = \sigma^2 = 10$$

$$\text{Standard deviation} = \sigma = \sqrt{10} = 3.16$$

Alternate Formula for Variance

σ^2 = average of the squared data values
minus the square of the mean

$$\sigma^2 = \frac{4^2 + 6^2 + 10^2 + 12^2}{4} - 8^2$$

$$\begin{array}{r} 16 \\ 36 \\ 100 \\ 144 \\ \hline 4 \overline{) 296} \\ \underline{-64} \\ 10 \end{array}$$

6D #1. Find 2 equations.

$$\left\{ \begin{array}{l} \frac{a + b + 2 + 3 + 5 + 5}{6} = 3 \\ \frac{a^2 + b^2 + 2^2 + 3^2 + 5^2 + 5^2}{6} - \frac{27}{9} = \frac{7}{3} \end{array} \right.$$

$$\left\{ \begin{array}{l} a + b = 3 \\ a^2 + b^2 = 5 \end{array} \right.$$

solve by
substitution
for #1

$$\begin{array}{r} \frac{34}{3} \cdot 6 \\ = 68 \\ \underline{-63} \\ 5 \end{array}$$

HW ~~6A~~ # 1b (no calculator - use graph paper)
2c (" ")
4, 5

6B # 1 (no work)

6C # 1, 2

6D finish # 1, # 2 a