5/6/15

Statistics Review 11-0

- science of collecting, analyzing & interpreting data.
- univariate data → one-variable

population → data for the entire set
ie: all Skyline Students
ie: all people in WA

sample → data for part of the set
ie: students in 1st per. math
ie: WA Residents w/ SSN ending in 3

Measures of Central Tendency

mean → average $\frac{\sum x}{n}$ population μ "mu"
sample $\bar{x}$ "x-bar"

reorder data:
- median → middle number in the data set or average of the 2 middle numbers.
- mode → most frequent data point(s)

EX 1) Measures of Central Tendency for

{ 14, 7, 12, 4, 13, 20, 14, 4 }

$\mu = \frac{88}{8} = 11$

4, 4, 7, 12, 13, 14, 14, 20

median: $\frac{12+13}{2} = 12.5$

mode: 4 and 14

Measures of Spread

how similar or different the data is.

Range → greatest to least value

Varience → average square distance to the mean "mean squared"

population	sample
$\sigma^2 = \frac{\sum (x-\mu)^2}{n}$	$s^2 = \frac{\sum (x-\bar{x})^2}{n-1}$

difference
square
sum
divide

Standard Deviation

how far away, on average, each data point is.

population	sample
σ	s

(square root of variance)

Ex 2 Measures of Spread for

x	$(x-\mu)$	$(x-\mu)^2$
4	−7	49
4	−7	49
7	−4	16
12	1	1
13	2	4
14	3	9
14	3	9
20	9	81
		218

$\mu = 11$

var: $\sigma^2 = \frac{218}{8} = 27.25$

SD: $\sigma = \sqrt{27.25} = 5.22$

Range = 16

Homework pg P37 1, 4-6, 9, 10, 12
(by hand)