Section 2.4 PART 3

SUMMARIZING DATA!

Using Measures of Variation

Frequency Table for Adult Female Heights

class	frequency = f	class midpoint = x	fx^2	fx
148.0 - 155.2	5	151.6	114912.80	758.0
155.3 - 162.5	16	158.9	403987.36	2542.4
162.6 - 169.8	5	166.2	138112.20	831.0
169.9 - 177.1	3	173.5	90306.75	520.5
177.2 - 184.4	1	180.8	32688.64	180.8
	$n \to 30$		780007.75	4832.7

Estimating Sample Std. Deviation from a Frequency Table

$$s = \sqrt{\frac{\sum fx^2 - \frac{1}{n}(\sum fx)^2}{n-1}}$$

$n = \sum f$ = sample size

x = class midpoint.

$$= \sqrt{\frac{780007.75 - \frac{1}{30} \cdot 4832.7^2}{30-1}}$$

$$= \sqrt{\frac{1508.107}{29}} = \sqrt{52.00369} = 7.2114 \approx 7.21$$

Population Standard Deviation from a frequency Table.

$$\sigma = \sqrt{\frac{\sum fx^2 - \frac{1}{N}(\sum fx)^2}{N}}$$

(for a finite populations.)