# Section 1: cont'd

Friday, March 10, 2017    2:58 PM

handout:

(1) $\mu = \dfrac{1+6+1+8+1+1+9}{7} = \dfrac{27}{7} \approx \underbrace{3.857142857}_{\text{ridiculous number of decimals}}$

$\approx 3.9$

in general, can give at least one more decimal point than the original data

median: 1 1 1 1 6 8 9

(3) let $x$ = 4th test mark

$\mu = 70 = \dfrac{58+63+71+x}{4}$

$280 = x + 192$

$x = 88$

(4)

| | | |
|---|---|---|
| pop 1 | 43 meas | mean 71 |
| pop 2 | 26 | 68 |

$\mu = \dfrac{\text{sum of all measurements}}{\text{total number}}$

$$= \frac{sum_1 + sum_2}{43 + 26}$$

but $\mu_1 = 71 = \frac{sum_1}{43}$ so $sum_1 = 43(71)$

$sum_2 = 26(68)$

$$\mu = \frac{43(71) + 26(68)}{43+26} = \frac{4821}{69} \approx 69.9$$

further notes on median:

for a data set of n ordered measurements, the median is in position $\frac{n+1}{2}$

for 75 points, the median is the $38^{th}$ point

for 76 points, the median is the $\underbrace{38.5^{th}}_{\text{average of the } 38^{th} \text{ and } 39^{th} \text{ points}}$ point

if mean $\neq$ median, we say that the data is <u>skewed</u> and in that case the median is more representative than the mean examples: salaries, housing prices