Community College of Philadelphia **Spring 2012**
Math 251-Satistics for Science **Dr. Yun Yoo**

Attendance Quiz 3

Name:_____ Date:_____

1. **Given Data (from AQ#1,2)** find the sample mean from a frequency distribution. (Recall that class midpoint from AQ#1). I just recall for formula: $\bar{x} = \frac{\sum (f \bullet x)}{\sum f}$

Systolic Blood Pressure of Women	Frequency f	Class Midpoint x	$f \bullet x$	$f \bullet x^2$
80-99	9			
100-119	24			
120-139	5			
140-159	1			
160-179	0			
180-199	1			
Total	$\sum f =$		$\sum (f \bullet x) =$	$\sum (f \bullet x^2) =$

Note: If we use the original list of 40 values, then we get $\bar{x} = 110.8$. Remember, the frequency distribution yields an approximation of $\bar{x}$, because it is not based on the exactly original list of sample values.

2. Find the sample standard deviation from a frequency distribution. I just recall for formula: $s = \sqrt{\frac{n[\sum (f \bullet x^2)] - [\sum (f \bullet x)]^2}{n(n-1)}}$.

3. Find the sample variance from a frequency distribution. Remember that the relationship between standard deviation and variance.

4. Listed below are ages of motorcyclists when they were fatally injured in traffic crashes (based on data from the U.S. Department of Transportation). Find the sample mean $\bar{x}$, the median $\tilde{x}$,the midrange, standard deviation s, variance s^2.

38	27	14	18	34	16
40	20	23	31	30	21

I think that this table will be helpful.

x	x^2	$x-\bar{x}$	$(x-\bar{x})^2$
38			
27			
14			
18			
34			
16			
40			
20			
23			
31			
30			
21			
$\sum x =$	$\sum x^2 =$	$\sum (x-\bar{x}) =$	$\sum (x-\bar{x})^2 =$

Recall for formulas for single data set:

$$\bar{x} = \frac{\sum x}{n}$$

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

$$s = \sqrt{\frac{n\sum x^2 - (\sum x)^2}{n(n-1)}}$$ shortcut formulas :

Try to find sample standard deviation using two different formulas.