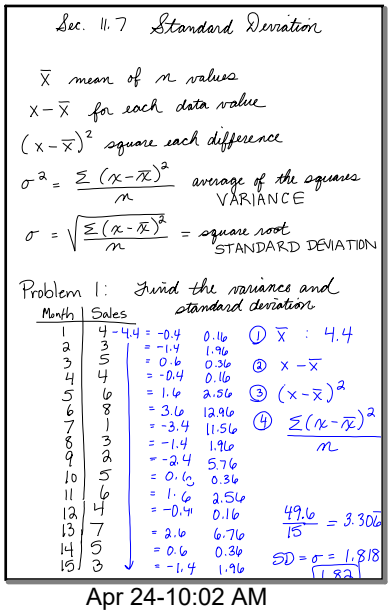

Sec. 11.7 Standard Deviation

$\bar{x}$ mean of n values

$x - \bar{x}$ for each data value

$(x - \bar{x})^2$ square each difference

$\sigma^2 = \frac{\Sigma (x-\bar{x})^2}{n}$ average of the squares
VARIANCE

$\sigma = \sqrt{\frac{\Sigma (x-\bar{x})^2}{n}}$ = square root
STANDARD DEVIATION

Problem 1: Find the variance and standard deviation

Month	Sales			
1	4	-4.4 = -0.4	0.16	① $\bar{x}$: 4.4
2	3	= -1.4	1.96	
3	5	= 0.6	0.36	② $x - \bar{x}$
4	4	= -0.4	0.16	
5	6	= 1.6	2.56	③ $(x-\bar{x})^2$
6	8	= 3.6	12.96	
7	1	= -3.4	11.56	④ $\frac{\Sigma (x-\bar{x})^2}{n}$
8	3	= -1.4	1.96	
9	2	= -2.4	5.76	
10	5	= 0.6	0.36	
11	6	= 1.6	2.56	
12	4	= -0.4	0.16	$\frac{49.6}{15} = 3.30\overline{6}$
13	7	= 2.6	6.76	
14	5	= 0.6	0.36	SD = σ = 1.818
15	3	= -1.4	1.96	

Apr 24-10:02 AM