me

Alg I

10.2 Ext. Calculate Variance and Standard Deviation

I can find the variance and standard deviation of a data set.

Ch. 10 Quiz

Ch. 9/10 Test

Complete Practice, pg. 670, #

Variance: σ^2 = sigma squared

$$\sigma^2 = \frac{(x_1-\bar{x})^2+(x_2-\bar{x})^2+\dots+(x_n-\bar{x})^2}{n}$$

Standard Deviation: σ = sigma

$$\sigma = \sqrt{\frac{(x_1-\bar{x})^2+(x_2-\bar{x})^2+\dots+(x_n-\bar{x})^2}{n}}$$

Example 1:

1) 4, 5, 3, 2, 4, 7, 8, 9, 4, 6, 7, 8, 9, 1 $\quad n=14$

1, 2, 3, 4, 4, 4, 5, 6, 7, 7, 8, 8, 9, 9

$\bar{x} = \frac{1+2+3+4+4+4+5+6+7+7+8+8+9+9}{14} = \frac{77}{14} = 5.5$

$\sigma^2 = (1-5.5)^2+(2-5.5)^2+(3-5.5)^2+(4-5.5)^2+(4-5.5)^2+(4-5.5)^2+$
$(5-5.5)^2+(6-5.5)^2+(7-5.5)^2+(7-5.5)^2+(8-5.5)^2+(8-5.5)^2+$
$(9-5.5)^2+(9-5.5)^2 = 20.25+12.25+6.25+2.25+2.25+2.25+$
$0.25+0.25+0.25+2.25+6.25+6.25+12.25+12.25$

$\frac{87.5}{14} = \boxed{6.3}$

$\sigma = \sqrt{6.3} = \boxed{2.5}$