Devry University Summer 2005

Math 191: Probability & Statistics Instructions for Lab Week 7

Goal(s):

- To calculate mean, variance and standard deviation using known formulas

$$\mu = \sum x \cdot p(x),\ \sigma^2 = \sum x^2 \cdot p(x) - \mu^2, \text{ and } \sigma = \sqrt{\sigma^2}$$

- To show that the calculation for raw data works in both ways
- Use casualty data in Iraq from January until now

Instructions:

(1) Construct a frequency table similar to the problem in exam #1
(2) Use expressions like **"COUNTIF(A$1:A$100,D1)"**. Why are there dollar signs?
(3) Then, check the total using the **"SUM"** function
(4) Then, convert to relative frequencies.
(5) Then, to calculate the **mean** μ use expressions such as **"SUMPRODUCT(D1:D10,F1:F10)"**.
(6) To calculate the variance σ^2, you first need the sum of the squares which can be found using a product of 3 columns such as **"SUMPRODUCT(D1:D10,D1:D10,E1:E10)"**.
(7) Then combine the result with the square of the previous calculation as needed to determine the variance.
(8) Finally, take the square root **(SQRT)** of the Variance to find the standard deviation.
(9) In addition, check this result against the raw mean **(AVERAGE)**, variance **(VARP)** and standard deviation **(STDEVP)** calculations