

Homework No. 1 - Basic Algebra and Statistics

Objectives:

The objectives of this assignment are to get you thinking about statistics again, and practice skills you mastered in previous coursework.

Instructions:

Complete the following. You must show all of your work. This is the one and only time I require you to complete the assignment by hand, and without the use of a computer spreadsheet.

ONE: Complete problems 1-1, 1-2 and 1-3 in Avery and Burkart (2002, p. 9).

TWO: Basic algebra:

a) find the product $(x^2 - 3xy + y^2)(4xy^2) =$

b) perform the division $\frac{24x^3y^2z}{4xyz^2} =$

THREE: Assuming a tree is cone shaped can allow rough approximation of the volume of a tree. Given this, find the approximate volume in cu. ft. of a tree with a dbh of 22.4 in. and height of 45.7 feet.

FOUR: If $x_1 = 4$, $x_2 = 6$ and $x_3 = 7$, find

a) $\sum x_i$; b) $\sum_{i=1}^3 2x_i^2$; c) $\sum_{i=2}^3 (x_i - i)$. Be careful, and show your work.

FIVE: If $x_1 = 2$, $x_2 = -5$, $x_3 = 1$, $y_1 = 4$, $y_2 = 2$, and $y_3 = 5$, find

a) $\sum_{i=1}^3 x_i y_i$; b) $\left(\sum_{i=2}^3 x_i \right) \left(\sum_{j=1}^2 y_j^2 \right)$. Be careful, and show your work.

SIX: An ecologist measured percent cover of *Rubus* on plots in Keewenaw County in 2005. The values were, in percent: 18, 9, 11, 92, 22, 10, 11, 25, and 17. Calculate the mean, median and the midrange. The midrange is just the mean of the range. Which measure of central

tendency do you think best describes the sample? Justify your choice.

SEVEN: The average grade of 10 students on a mid-term exam was 73. If 9 of the grades were 26, 81, 76, 82, 68, 78, 78, 80 and 98, what must be the other grade?

Product:

Submit your answers in professional memo format. I suggest you summarize your answers in a computer-generated memo, and attach your handwork as an appendix.

You must put your Lab Section on your memo and address the memo to your TAs.

Due Date:

This assignment is due at the beginning of class on Wednesday January 21, 2009.