

Math110
Spring, 2009

Computer Lab #3

In 1916, the American Federation of Teachers (AFT) was formed by three teacher groups in Chicago, Illinois and locals from Gary, Indiana; New York, New York; Scranton, Pennsylvania; and Washington D. C. Today AFT represents 1.4 million teachers, higher education faculty and staff, school support staff, state and municipal employees, and health care professionals.

Each year the AFT publishes the Survey and Analysis of Teacher Salary Trends. This report focuses on national trends in teacher salaries, state comparisons, beginning teacher salaries, and salary data and living costs for the nation's 50 largest cities.

The table below shows the salaries of a random sample of teachers from California, Ohio, and Wyoming.

<u>California</u>	<u>Ohio</u>	<u>Wyoming</u>
60,645	45,300	37,300
50,622	46,400	58,022
41,400	42,650	36,800
59,000	58,025	32,440
46,150	64,800	42,250
63,200	41,200	35,600
68,400	44,980	44,600
53,400	50,425	52,935
62,378	47,300	45,500
58,873	45,700	36,160
53,395	44,850	44,200
56,000	65,200	42,260
63,200	37,760	44,185
67,400	52,426	32,450
65,405	53,800	40,200
52,200	50,200	50,786

1. Use a normal probability plot to determine whether each sample is from a normal, or approximately normal, population.
2. Are the samples independent of each other? Explain.
3. Find the standard deviation of each sample. Were the samples selected from populations having approximately equal variances?
4. Test the claim that teachers from California, Ohio, and Wyoming have the same mean salary at the 5% significance level.

Using EXCEL for one-way ANOVA test

1. Input your data in Column A, Column B, Column C.
2. Select Excel's **Data Analysis** (2007 version -- click on **DATA** then click on **Data Analysis**; 2003 version -- click on **TOOLS**, then select **Data Analysis**)
3. Select -- **ANOVA: Single Factor**. Then click **OK**.
4. In the dialog box, enter the range containing all the sample data (A1:C ____ -- input the last cell that has data in it in Column C)
5. Click the button to indicate that the data are grouped by columns; and enter a significance level for alpha if the default value of 0.05 is not desired.
6. Click **OK** and the Excel Results should appear.