ENME 392 Fall 2011
Homework 11
Due Tuesday April 26th <u>at the beginning of the class</u>

Notes:

1. You may *not* look at solutions from previous years, since many of the problems assigned here have been used before. The honor code applies and you must include the honor code pledge (please see syllabus) on your homework.

2. Please show all your steps in the solution of the problems.

3. You may use Microsoft Excel, but keep in mind that you will need to be prepared to work problems like these by hand on an exam.

Total number of points: 60

Assignment:

1. Chapter 12: 12.3
PLUS, compare to the results obtained by doing each X separately. Discuss.
(10 pts)

2. The following data represent the number of hours of sleep that engineering students got per night and GPA. Is there a relationship between the two? You may use Excel for this. Comment on the underlying assumptions.
(10 pts)

Gender	Sleep/night	GPA						
			Male	8	2.461	Male	6.5	3.884
Male	6	3.667	Female	4	3.45	Female	5	3.26
Female	6.5	3.85	Male	6	3.86	Male	6	3.54
Male	6	3.4	Female	6	3.4	Male	6	3
Male	6.5	3	Male	7	3	Male	7.5	3.586
Female	8	2	Female	7	3.61	Male	7.5	3.69
Male	7.5	1.9	Male	5	3.21	Male	5	3.6
Female	7	2.3	Male	6	3.5	Male	7	1.78
Male	7	3.2	Male	4.5	3.21	Male	5	2.985
Male	6	2.95	Male	5	3.527	Male	7	2.8
Male	4	2.8	Male	7	2.5	Male	6	4
Male	7	3	Male	7	3.5	Female	6.5	2.4

Sex	Sleep	GPA	Sex	Sleep	GPA	Sex	Sleep	GPA
Male	6	4	Female	5	2.66	Male	7	3.2
Male	8	4	Female	5	3	Male	7	2.4
Male	8	3.67	Female	5	4	Male	7	3
Female	7	3	Male	5	2.8	Male	7	3.48
Female	5	3.5	Male	5	3.4	Male	7	2.9
Male	4.5	3.56	Female	5	4	Male	7	3.3
Male	6	3.6	Male	5	3.77	Female	7	4
Male	6	3.08	Male	6	3.1	Male	7	3.45
Male	7	3.6	Female	6	3.4	Female	7	3.3
Male	6	3.65	Male	6	3.8	Male	7	3.41
Male	5	4	Male	6	4	Male	7	3.6
Male	6	3.26	Male	6	3	Female	7	2.64
Female	7	3.94	Male	6	3.64	Female	7	3.8
Male	7	3.3	Female	6	4	Female	7	3.53
Male	5.5	3.7	Male	6	3.9	Male	7	3.8
Male	5	3.2	Male	6	3.7	Male	7	3.75
Male	8	3.5	Male	6	3.6	Female	7.5	3.7
Male	7	3.01	Female	6	2.5	Female	8	4
Male	7	3.86	Male	6	2	Male	8	2.87
Female	7	3.73	Male	6	3.9	Female	8	3.55
Male	6	3.93	Male	6	4	Male	8	3.24
Male	6	4	Female	6	3.6	Female	8	3.939
Male	7	3.111	Male	6	2.7	Male	8	3.47
Male	7	3.7	Female	6	2.882	Male	8	3.8
Female	8	3.87	Male	6.5	3.47	Male	8	4
Male	4	3.764	Male	7	3.95	Male	8	3.27
Male	4.5	3.5	Male	7	3.32	Male	8	3.7
Male	5	2.8	Female	7	3.4			
Male	5	3.9	Female	7	3.85			

3. **Using the same data as in the previous problem, is there a difference in the number of hours of sleep gotten by men and women? Don't forget data plots.**
(10 pts)

4. **Using the same data, is there a difference in the GPAs of male and female students, based on these data? Don't forget data plots.**
(10 pts)

5. The number of defects on printed circuit boards is counted, giving these data. Do they follow a Poisson distribution?

(20 pts)

# Defects	Frequency
0	32
1	15
2	9
3	4