HW3 and HW12
Andrew Michaelson

These are the solutions in blue to at least 60% of the problems for chapter 3 and chapter 12.
Everything that is not in blue is part of my notes.

Problem 3.1

A particular group of friends does not represent all students.

Problem 3.3

A computer programmer and his friends do not represent all young people.

Problem 3.13

The ones who choose to use the software might be better students.

Problem 3.79

Population	undergraduate college students
Sample	2036 students

Problem 3.81

The larger sample has less variability in its samples.

Problem 12.1

part a

The null hypothesis says that all the population mean are the same.

part b

Doing experiments helps to figure out why something happenned.

part c

One way analysis of variance (ANOVA) is used when the explanatory variable has at least values.

Problem 12.5

part a

This describes between group variation.

part b

Sum of squares is additive.

part c

standard deviation is a parameter.

Problem 12.7

If the t-test shows that the means are different the contrasts and multiple comparisons provide no useful additional information.

Problem 12.19

part a F can get close to zero, and P gets close to 1.

part b F increase and P decrease.

Problem 12.47

part a

	sample size	mean	standard deviation
control	10	601.1	27.36
high jump	10	638.8	16.59
low jump	10	612.5	19.33

part b

Here F is 7.98 its degrees of freedom are 2 and 27, and P is 0.002 .
This means that not all the means are equal.