HW6
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These are the solutions in blue to at least 60% of the problems for chapter 6.
Everything that is not in blue is part of my notes.

Problem 6.10

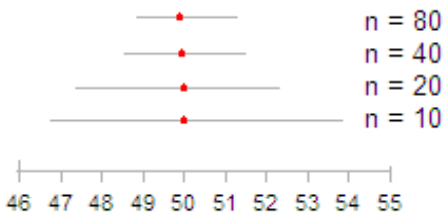
part a The 95% confidence level is 93 ± 11 .

part b The margin of error should be bigger since at 95% confidence the margin of error is at least ± 11, and a 99% confidence means that we are 99% confident our answer falls within the predicted range. Thus, a bigger confidence means a bigger range of error.

Problem 6.11 m=z*(ó/(n^0.5)) 95% Confid.

		m	n	mean	SD	Z* (1.96)
54	1					
53.58	1	3.58	10	50	5	2.2620
52.34	2	2.34	20	50	5	2.09
51.6	3	1.6	40	50	5	2.03
51.11	4	1.11	80	50	5	1.98
46.42	1					
47.66	2					
48.4	3					
48.89	4					
48	4					

The diagram shows as the z* decreases, so does the margin of error.



Problem 6.13

m	n	mean	SD	Z* (1.96)
0.1554	2673	7.5	4.1	1.96

7.5 ± 0.16 which is the 95% confidence interval .

Problem 6.15

m	n	mean	SD	Z* (1.96)
0.13	2673	8.7	3.5	1.96

8.7 ± 0.13 is the 95% confidence interval here.

Problem 6.17

m	n	mean	SD	Z* (1.96)
2.29	31	13.2	6.5	1.96

13.2 ± 2.29 is the 95% confidence interval here.

Problem 6.25

m	n	mean	SD	Z* (1.96)
	200	1791	31	

part a The standard deviation of the sample mean is 31/(200^0.5) = 2.19 .

part b 4.3 is the standard error.

part c 4.3 is plus or minus the number of calories.

Problem 6.50

part a The standard deviation of the sample mean is not correct
it should instead be 12/(20^0.5) which is 2.68 .

part b The null hypothesis should be that μ is 10 .

part c Not enough information is given both the SD and population size
are missing.

part d Not enough information is given to make the given conclusion.

Problem 6.57

part a The P-value is 0.0418 .

part b The P-value is 1 – 0.0418 which is 0.9682 .

part c The P-value is 0.0418*2 which is 0.0836 .

Problem 6.65 This means in this case that the data is important at level 0.05 and
if a change occurred it would have been very small.

Problem 6.73

part a Ho is 1.4 miligrams of nicotine.
Ha is greater than 1.4 miligrams of nicotine.

Problem 6.73

part b Yes

part c Yes

Problem 6.87

The first p value is 0.049, so that number is just barely below the threshold for significance at the 5% level, so if it were not for the second p value which is 0.00002 I would possibly have decided to create a new test for the first one. However, since the p value for the second one is so low it allows us to make a clear rejection for the null hypothesis.

Problem 6.88

I can not interpret this result by itself(, but presuming a significance level of 5% than the null hypothesis might not be rejected).

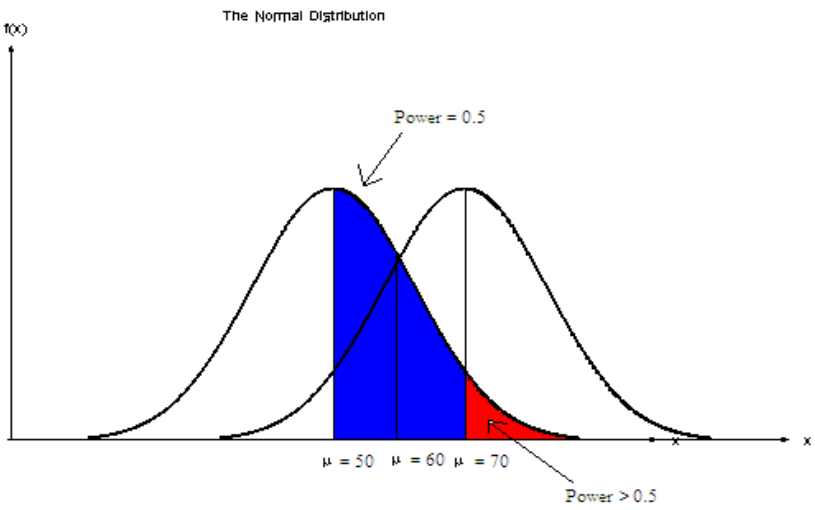
Problem 6.89

part a If the p-value is lower than the level of significance than the test can be significant especially if the p-value is much lower than the level of significance.

part b A test of significance can explain if an oserved effect is compatible with the null hypothesis if the p-value is significantly lower than the value for the null hypothesis.

part c A test of significance by itself can not explain if an observed effect is important or not.

Problem 6.109



I expect the power to be higher than 0.5 since the μ value is greater here.

Problem 6.113

X=(2.326-460)/(100*500^0.5)

-2.2361

Power = 0.4207

Problem 6.127

I think that this statement is true that results can not be explained by chance alone.

5.4

2.19

2.68

0.0418 0.9582 0.0836

-0.8550

0.42
0.4681

2.2361

439.6

-4.7
-3.7

0.53

3.24