HW7.3 and HW8
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These are the solutions in blue to at least 60% of the problems for chapter 7.3 and 8 .
Everything that is not in blue is part of my notes.

Problem 7.98

part a

Sample	n	S^2
1	10	3.1
2	16	9.3

F = test statistic = (larger s^2)/(smaller s^2)

F = 3.0000

part b Significance = 0.05*2 = 0.1

part c I conclude that the null hypothesis is true.

Problem 7.99

	Females		Males	
	mean	sd	mean	sd
Total Cholest	173.7	34.79	171.81	33.24
LDL	96.38	29.78	109.44	31.05
HDL	61.62	13.75	46.47	7.94

The standard deviation for females is larger than the standard deviation for males.

F = 1.0954

Degrees of freedom for females is 70 and the degrees of freedom for males is 36.
The one tailed p-value is < 0.1 .
From this we can not tell if the distribution is normal so we can not tell if this test is valid to use here.

Problem 7.102

Group	n	mean	sd	df
Intervention	165	4.1	1.19	164
Control	212	3.67	1.12	211

F = 1.1289

The one tailed p-value is < 0.01 .
From this we can not tell if the distribution is normal so we can not tell if this test is valid to use here.

Problem 7.105

North	South			
27.8	44.4	sd North	sd South	
14.5	26.1	17.5	14.26	
39.1	50.4	Yes, there are statistically significant		
3.2	23.3	differences between North and South		
58.8	39.5	between these two parts of the tract.		
55.5	51			
25	48.1	F = 1.5064		
5.4	47.2	2.1000		
19	40.3	p is < 0.025		
30.6	37.4	From this I can not tell if the distribution		
15.1	36.8	is normal or not, so we can not tell if		
3.6	21.7	this test should be used here or not.		
28.4	35.7			
15	32			
2.2	40.4			
14.2	12.8			
44.2	5.6			
25.7	44.3			
11.2	52.9			
46.8	38			
36.9	2.6			
54.1	44.6			
10.2	45.5			
2.5	29.1			
13.8	18.7			
43.5	7			
13.8	43.8			
39.7	28.3			
6.4	36.9			
4.8	51.6			

Problem 7.107

	Immediately after baking	47.62	49.79
	Three days after baking	21.25	22.34

part a

sd 2 days	sd 3 days	alpha = 0.05
1.53	0.77	

F = 3.96

p is < 0.1 for one tail test.

Power = -8

The ratio would have to exceed 19 for us to reject the null hypothesis.

This tells us the power is quite low.

part b Since p is larger than 0.05 the alternative hypothesis is rejected.

Problem 8.7

part a Yes
part b Yes
part c No
part d No
part e No

Problem 8.11

5594 in survey
3547 people gamble from people in survey

part a sample proportion = 0.63431

sep=((p(1-p))/n)^0.5 m=z*sep
0.0064 0.0126

confidence interval = 0.63431 ± 0.0126

{ 0.6467 0.6214 }

The 95% tells us most of the people from this group surveyed are gamblers.

part b This did not affect my results since I did not take this into account

Problem 8.19

1280 student loan borrowers 95% Confidence
192 have loans > $30,000.00

sample proportion = 0.1500

sep = 0.0100 m=z*sep
0.0196

confidence interval = 0.1500 ± 0.0196
{ 0.1696 0.1304 }

Problem 8.23

184.23
185 women went on this diet last year

sample proportion = 0.6929
sep m=z*sep
0.0282 0.0553
Confid. = { 0.7482 0.6376 }

Problem 8.53

part a

Gender	n	X (juvenile)	Proportion
Female	60	48	0.8000
Male	132	52	0.3939

sed = ((p1(1-p1))/n1) + (p2(1-p2))/n2))^0.5

0.0516

0.0425

part b

0.0669 is sed m=z*sed

D is 0.41 0.1100

Confid. = { 0.5161 0.2960 }

This tells us at 90% Confidence our data is between 0.5161 and 0.2960 .

part c

6.07

p_hat =	0.52
sedp =	0.08
Z =	5.22
1- z =	-4.22

This means they are not equal.

0.1

0.6341

0.1500

0.6929	sep=((p(1-p))/n)^0.5	m=z*sep
	0.0000	0.0000

+(F152*(1-F152)/D152))^0.5

p1-p2

0.41