Homework4

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6.99) a. x = (2453.7 - 2403.7) / (880 / 10) = 0.5687 p(x > .5687) = 0.2877 The p-value is greater than the alpha-value, so its no significant

b. x = (2453.7 - 2403.7) / (880 / rt(500)) = 1.2705 p(x > 1.2705) = 0.102 Same reason as above. The p-value is less than the alpha-value.
c. x = (2453.7 - 2403.7) / (880 / rt(2500)) = 2.8409 p(z > 2.8409) = .0023 The p-value (.0023) is less than alpha-value (.05), so we reject the null hypothesis and accept the alternative hypothesis.

6.120) a. P(Type 1) = P(p0(x = 0 | x = 1 | x = 2)) = .1 + .1 + .2 = .4

b. P(Type 2) = P(p1(x = 3 | x = 4 | x = 5 | x = 6)) = .1 + .1 + .1 + .1 = .4

7.22) a. Degrees pf freedom = n - 1 = 16 - 1 = 15

b. Critical values = 2.131 and 2.249
c. 0.02 and 0.025
d. both p-values (0.02 and 0.025) are below the alpha-value (0.05), so reject the null hypothesis. both p-values (0.02 and 0.025) are below the alpha-value (0.01), so no reject the null hypothesis.
e. 0.024137

7.23) a. 26

b. Critical Values = 1.703, 2.01, and 2.056
c. Two sided test, 0.05 and 0.10
d. It is not significant at either 5% or 1%
e. 0.0549

7.71)

a.

The t distribution is apprporiate because there are no outliers or major skewness, and it is normal.

b.

c. let m = mu in H0: m1 = m2 Ha: m1 != m2

d. t = (.571 - 2.118) / (root((.73^2)/.4 - (1.244^2) / .7)) = -4.306 p-value = 0

The p-value (0) which is less than alpha, so we reject the null hypothesis.

e. (.571 - 2.118) +/- ((2.16) * root(((.330)^2)/14 - ((1.244)^2)/17))

7.89) a. let 'm' = mu in mb - breat fed mF - formula H0: mB = mF Ha: mB > mF

b. 95% confidence interval: (3.3 - 12.4) += 2.101 * root(((1.7)^2) / 23 + ((1.8) ^ 2) / 19) I am 95% confident that the true difference is between .2434 and 2.0434

c. The samples are a simple random sample and a normal population.

7.102) H0: sd1 = sd2 H1: sd1 != sd2

a. F = .38

b. F(critical) = (n1 - 1, n2 - 1) = 2.54

c. The f-value is not critical

7.122) a.

b. mean = -.853 s^2 = 1.611 t = -2.13 p = .062 df = 9

c. There seems to be no difference

8.71) proportion of female juvenile references = number of chances (x1) / number of observed(n1) = 48/60 = 0.8

std.err for females: 0.0516

proportion of MALE juvenile references = number of chances (X1) / number of observed (N1) = 52 / 132 = 0.392

std.err for male: 0.0425

b. 90% confidence interval p1 = .8 n1 = 60 ps = .394 n2 = 132 90% confidence interval = (0.296, 0.5161)

I am 90% confidence that there will be 29.6% to 51.61% more juvenile females than juvenile males relative to the population

c. x = 5.2197 so p is 0