**Homework 4**

7.71

pg. 841

7.89

a.

H0 : the hemoglobin level among breast-fed babies are same as the hemoglobin level among formula babies

H1 : the hemoglobin level among breast-fed babies are higher than the hemoglobin level among formula babies

t = = = 1.654

**Using R-Studio**, I calculated the P(value) = was 0.053.

Because the P-value is greater than the significant level (0.05 we’re assuming), then we fail to reject the null hypothesis. Therefore, we conclude there is no significant evidence to support the claim that hemoglobin level among breast-fed babies are higher than formula babies.

b.

= (13.3 – 12.4) 2.101()

= (-0.2434, 2.0434)

The 95% confidence interval is between -0.2434 and 2.0434

c.

a and b can only be valid when both samples are two independent samples from normal population.

7.102

H0: σ1 = σ2

H1: : σ1 ≠ σ2

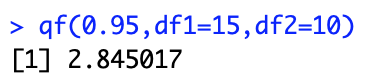
a.

F = = = 2.6

The test statistics is 2.6.

b.

From R-Studio:



Therefore, the critical value is 2.845.

c.

Since 2.6 < 2.85, the test statistic value is less than the critical value. Therefore, we fail to reject the null hypothesis. We can conclude that the two population standard deviations are equal.

7.122

a.

pg. 858

8.71

a.

Female : n1 = 60

X1 = 48

1 = = = 0.8

SE(1) = = = 0.0516

Male: n2 = 132

X2 = 52

2 = = = 0.394

SE(2) = = = 0.0425

b.

(1-2) ± Zα/2 = (0.8-0.394) ± 1.645

= 0.406 ± 0.11 = (0.296,0.516)

The difference between the two proportion is somewhere between 0.296 and 0.516.

c.

H0: p1 = p2

H1: p1 ≠ p2

p1 represents the population proportion of females, p2 represents the population proportion of males

= = = 0.5208

z = = = 5.22

Reject H0 if z < -1.645 or z > 1.645

Otherwise do not reject H0

Since the test statistic value (5.22) falls in the rejection region, we can reject the null hypothesis. Therefore, we can conclude that there is a difference in the proportion of female references that are girls to the male references that are boys.