For Homework #2

Mistakes caused by the incorrect formula

7

1.2/3 points awarded

Scored

eBook

References

Do a two-sample test for equality of means assuming unequal variances. Calculate the *p*-value using Excel.

(a-1) Comparison of GPA for randomly chosen college juniors and seniors:

$\bar{x}_1 = 4.25$, $s_1 = .20$, $n_1 = 15$, $\bar{x}_2 = 4.6$, $s_2 = .30$, $n_2 = 15$, $\alpha = .025$, left-tailed test.

(Negative values should be indicated by a minus sign. Round down your *d.f.* answer to the nearest whole number and other answers to 4 decimal places. Do not use "quick" rules for degrees of freedom.)

d.f.	2,814 ✗
t-calculated	-3.7596 ✓
p-value	0.0001 ✗
t-critical	-1.9608 ✗

8

2.33/3 points awarded

Scored

eBook

Hint

References

A special bumper was installed on selected vehicles in a large fleet. The dollar cost of body repairs was recorded for all vehicles that were involved in accidents over a 1-year period. Those with the special bumper are the test group and the other vehicles are the control group, shown below. Each "repair incident" is defined as an invoice (which might include more than one separate type of damage).

Statistic	Test Group	Control Group
Mean Damage	$\bar{x}_1$ = $ 1,100	$\bar{x}_2$ = $ 1,766
Sample Standard Deviation	s_1 = $ 685	s_2 = $ 812
Repair Incidents	n_1 = 13	n_2 = 10

Source: Unpublished study by Thomas W. Lauer and Floyd G. Willoughby.

(a) Construct a 98 percent confidence interval for the true difference of the means assuming equal variances. **(Round your final answers to 3 decimal places. Negative values should be indicated by a minus sign.)**

The 98% confidence interval is from	-1,451.863 ✓	to	119.863 ✓

(b) Repeat part (a), using the assumption of unequal variances with Welch's formula for *d.f.* **(Round the calculation for Welch's df to the nearest integer. Round your final answers to 3 decimal places. Negative values should be indicated by a minus sign.)**

The 98% confidence interval is from	-1,485.928 ✗	to	153.928 ✗

For Quiz #2

There are two “larger than” so I thought the sequence of the answers are from negative to positive numbers.

2

4.67/6
points awarded

Scored

The top food snacks consumed by adults aged 18 to 54 are gum, chocolate candy, fresh fruit, potato chips, breath mints/candy, ice cream, nuts, cookies, bars, yogurt, and crackers. Out of a random sample of 28 men, 12 ranked fresh fruit in their top five snack choices. Out of a random sample of 37 women, 22 ranked fresh fruit in their top five snack choices. Is there a difference in the proportion of men and women who rank fresh fruit in their top five list of snacks?

(a-1) Choose the appropriate hypotheses. Assume π_M is the proportion of men and π_w is the proportion of women.

a. H_0: $\pi_M - \pi_w = 0$ vs. H_1: $\pi_M - \pi_w \leq 0$
b. H_0: $\pi_M - \pi_w \neq 0$ vs. H_1: $\pi_M - \pi_w = 0$
c. H_0: $\pi_M - \pi_w = 0$ vs. H_1: $\pi_M - \pi_w \geq 0$
d. H_0: $\pi_M - \pi_w = 0$ vs. H_1: $\pi_M - \pi_w \neq 0$

- a
- b
- c
- d ✓

(a-2) State the decision rule for $\alpha = .05$. **(Round your answers to 3 decimal places. A negative value should be indicated by a minus sign.)**

Reject the null hypotheses if z_{calc}	-1.960 ✗	< z_{calc} >	1.960 ✗	.

My number is the same as answer but I didn’t get the score.

4

4.8/6
points awarded

Scored

A newly installed automatic gate system was being tested to see if the number of failures in 1,000 entry attempts was the same as the number of failures in 1,000 exit attempts. A random sample of eight delivery trucks was selected for data collection. Do these sample results show that there is a significant difference between entry and exit gate failures? Use $\alpha = 0.05$.

	Truck 1	*Truck 2*	*Truck 3*	*Truck 4*	*Truck 5*	*Truck 6*	*Truck 7*	*Truck 8*
Entry failures	42	44	54	55	65	50	46	43
Exit failures	47	50	57	60	58	46	55	48

picture Click here for the Excel Data File

(c) Find the critical value t_{crit} for $\alpha = 0.05$. **(Round your answer to 3 decimal places. A negative value should be indicated by a minus sign.)**

t_{crit}	2.365 ✗

Caused by incorrect formula

7

2/6
points awarded

Scored

Monthly rent paid by undergraduates and graduate students.

Undergraduate Student Rents (n = 10)				
780	760	900	680	730
810	790	630	1,060	680

Graduate Student Rents (n = 12)					
1,070	920	930	880	780	920
770	850	890	870	890	800

Click here for the Excel Data File

(a) Construct a 90 percent confidence interval for the difference of mean monthly rent paid by undergraduates and graduate students, using the assumption of unequal variances with Welch's formula for *d.f.* **(Do not round the intermediate calculations. Round your final answers to 3 decimal places. Negative values should be indicated by a minus sign.)**

The 90% confidence interval is from	-160.445 ✗	to	-37.222 ✗

For Quiz #1

Same number but I didn't get the score.

8

3/6
points awarded

Scored

GreenBeam Limited claims that its compact fluorescent bulbs average no more than 3.68 mg of mercury. A sample of 65 bulbs shows a mean of 3.78 mg of mercury.

(a) State the hypotheses for a right-tailed test, using GreenBeam's claim as the null hypothesis about the mean.

a. H_0: $\mu \geq 3.68$ mg vs. H_1: $\mu < 3.68$ mg
b. H_0: $\mu \leq 3.68$ mg vs. H_1: $\mu > 3.68$ mg
c. H_0: $\mu = 3.68$ mg vs. H_1: $\mu \neq 3.68$ mg

- a
- b ✓
- c

(b) Assuming a known standard deviation of 0.22 mg, calculate the z test statistic to test the manufacturer's claim. **(Round your answer to 2 decimal places.)**

Test statistic	(3.66) ✗