

MAT 158 PROJECT 4

In this project you will learn the following.

1. Finding Confidence Interval Estimate for a population Mean when the population standard deviation is unknown.
2. Finding Confidence Interval for the difference of two means given the samples are **Dependent**.
3. Finding Confidence Interval for the difference of two means given the samples are **Independent**.
4. Getting One-way **ANOVA** table.

1. Find a 90% Confidence Interval estimate for population mean μ with unknown standard deviation.

➤ Enter the following data in Column C1: 83, 58, 70, 56, 76, 64, 80, 76, 70, 97, 68, 78, 108.

➤ Choose: **Stat** → **Basic Stats** → **1-sample t**

➤ Samples in Column: **C1**

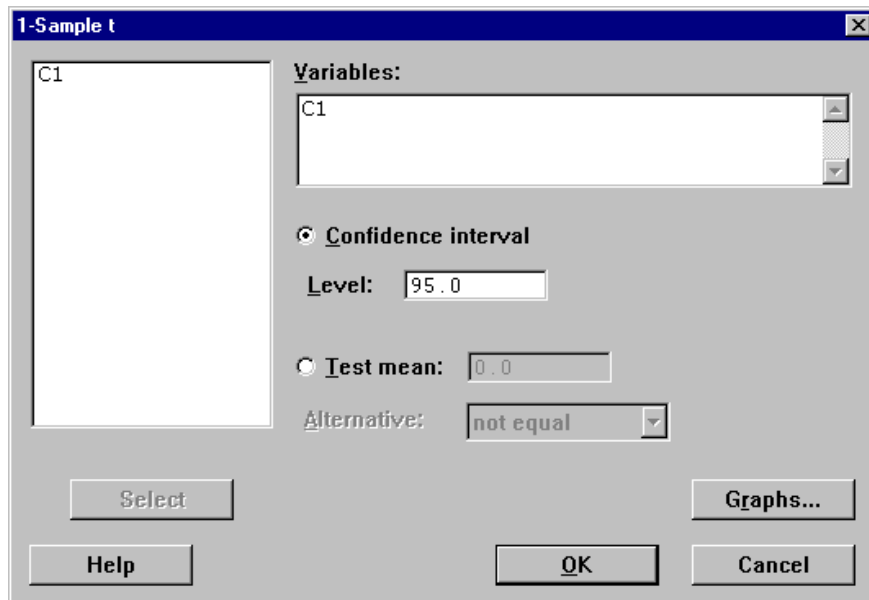
➤ Click on **Options**

➤ **Confidence level: 95.0**

➤ Alternative: Not equal

➤ Click: **OK twice**

➤ **Print**

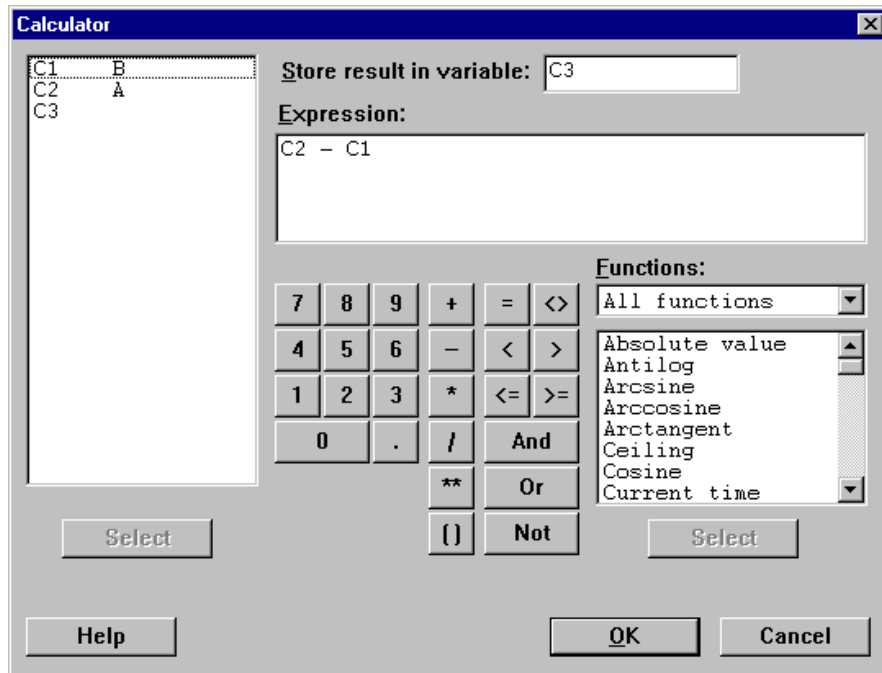


2. An experiment was designed to estimate the mean difference in weight gain for pigs fed ration A as compared to those fed ration B. Eight pairs of pigs were used. The pigs within each pair were littermates. The rations were assigned at random to the two animals within each pair. The gains after 45 days are shown in the following table.

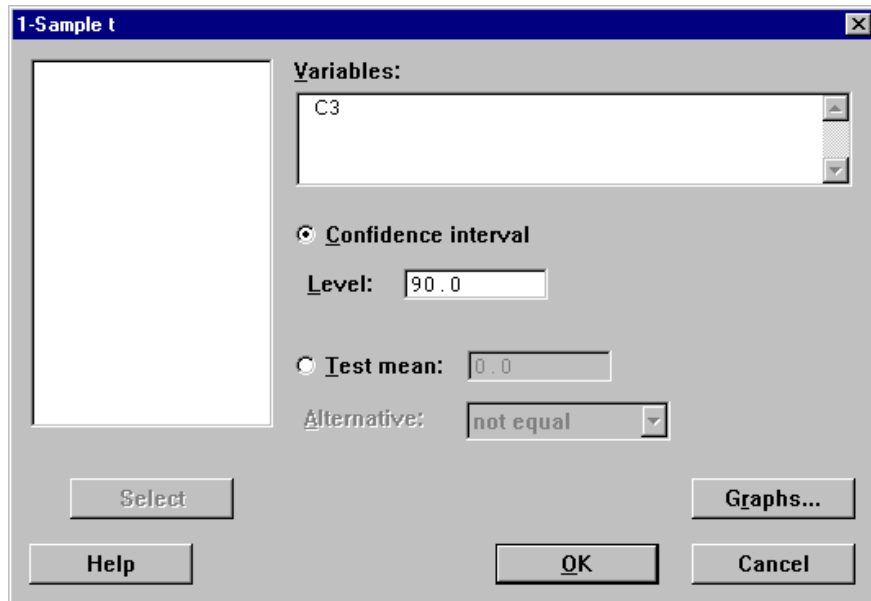
Litter	1	2	3	4	5	6	7	8
Ration A	65	37	40	47	49	65	53	59
Ration B	58	39	31	45	47	55	59	51

Assume weight gain is normal. Find the 90% Confidence Interval estimate for the mean of the difference μ_d , where $d = \text{ration A} - \text{ration B}$

- **Enter data from ration B in C1.**
- **Enter data from ration A in C2.**
- **Go to: Calc→ Calculator**
- **Store result in variable: C3**
- **Expression: C2-C1 or A-B**
- **Click: OK**
- **Print**



- Choose: **Stat** → **Basic Stat** → **1-sample t**
- Samples in Column: **C3**
- Click on **Options**
- **Confidence level: 90.0**
- Click: **OK Twice**
- **Print**



3. Ten soldiers were selected at random from each of two companies to participate in a rifle shooting competition. Their scores are shown in the following table.

Company A	72	29	62	60	68	59	61	73	38	48
Company B	75	43	63	63	61	72	73	82	47	43

Construct a 99% Confidence Interval for the difference between the mean scores for the two companies.

- Enter data from company A in **C1**
- Enter data from company B in **C2**
- Choose: **Stat** → **Basic Stat** → **2-sample t**
- Click : **Samples in different columns**
- First: **C1**
- Second: **C2**
- Test Difference: **0.0**
- Click On: **Options**
- Confidence level: **99.0**

- Alternative: **Not equal**
- Click: **OK Twice**
- **Print**

Comment [ID1]:

4. Students with different high school academic backgrounds were compared with respect to their aptitude in computer science. The students were classified as having excellent, above average or average or below average high school academic backgrounds. Each student was given the KSW computer-science aptitude test, and the score was recorded. The results were as follows.

High School Academic Performance

Excellent	Above average	Average or below
16	21	4
22	19	20
15	16	13
20	17	18
23	5	8

16	20	6
21	18	11
	19	
	14	
	22	
	13	

Use Minitab to get ANOVA table.

- Enter data: **Excellent in C1, Above average in C2, Average or below in C3**
- Choose: **Stat → ANOVA → One way (unstacked)**
- Enter under Responses in separate columns: **C1 C2 C3** Click: **OK**
- **Print**

