AS3 (Assignment 3, Unit 5): Independent and Dependent t-tests on SPSS

Please write your answers in red ☺

Jones and Smith's advertising company wish to know if cartoons on cereal boxes cause children to attribute higher taste ratings to the cereal. The advertising company hires a psychologist to conduct a study before developing a sales plan for the cereal. The psychologist randomly selects 24 participants for a pilot study. She randomly assigns the sample so that 12 participants eat the cereal with the cartoon on the box while the other 12 participants eat the cereal without a cartoon on the box. All participants then rated the taste of the cereal. Here are the ratings:

Without Cartoon	With Cartoon
3	3
4	4
7	8
5	7
8	8
8	8
4	9
7	4
5	7
6	6
6	8
7	4

l. What is the researcher's hypothesis?

Cartoons on cereal boxes cause children to attribute higher taste ratings to the cereal.

2. What is the null hypothesis?

Cartoon on cereal boxes cause no effect to attribute taste ratings to the cereal.

3. Exactly what mean differences are you comparing here?

Calculating the mean difference between the ratings of cereal boxes given to the children with and without cartoons.

4. What is the dependent variable? The dependent variable is the rating of the cereal box.

5. What is the independent variable? The independent variable is the cartoon being on cereal boxes.

6. Please analyze the data with the appropriate hypothesis test on SPSS and cut and paste your SPSS results here:

Group Statistics

	VAR00002	N	Mean	Std. Deviation	Std. Error Mean
VAR00001	1.00	12	5.8333	1.64225	.47408
	2.00	12	6.3333	2.05971	.59459

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
VAR00001	Equal variances assumed	1.417	.247	-.658	22	.259	.518	-.50000	.76045	-2.07707	1.07707
	Equal variances not assumed			-.658	20.960	.259	.518	-.50000	.76045	-2.08162	1.08162

Based on your SPSS results that you pasted above, please answer the following questions:

7. Please write your "statistical statement": t= (22) = - 658, P>.05

8. Did you reject or fail to reject the null hypothesis? Fail to reject the null hypothesis.

The mean for the cereal boxes without cartoons was M= 5.83 with a SD= 1.64. The mean for the cereal boxes with cartoons M= 6.3 with a SD= 2.05 There is evidence from the sample to conduct that the cartoons on cereal boxes do not cause children to attribute higher rate ratings to the cereal.

A researcher hypothesizes that arousal levels will be affected by meditation. The sample participates in formal meditation classes for 3 weeks, before and after which arousal is measured.

Subject	BEFORE MEDITATION	AFTER MEDITATION
1	72	91
2	162	155
3	145	152
4	183	190
5	123	134
6	167	157
7	76	99
8	112	104
9	124	143
10	137	156

l. What is the researcher's hypothesis?

Arousal levels are affected by Meditation.

2. What is the null hypothesis?

Arousal levels are not affected by meditation.

3. What is the dependent variable? The dependent variable is arousal.

4. What is the independent variable? The independent variable is Meditation.

5. What is the appropriate hypothesis test?

The appropriate hypothesis test is a t-test for two parallel sample, two -tailed-tailed t-test for two paired

6. Please analyze the data using the appropriate hypothesis test on SPSS and cut and paste your SPSS

e:

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean

Pair 1	VAR00001	138.1000[a]	10	31.27104	9.88877
	VAR00002	138.1000[a]	10	31.27104	9.88877

a. The correlation and t cannot be computed because the standard error of the difference is 0.

7. Based on your SPSS results, do you reject or fail to reject the null?

Fail to reject the null.

8. Please write tjected thhe “statistical statement” conclusory your SPSS results:

It is concluded that the null hypothesis Ho is not rejected therefore there is not enough evidence to claim that the arousal levels are not affected by meditation.

a. The correlation and t cannot be computed because the standard error of the difference is 0.

9. Please write your results in a “literature” or “research study” format:

It is concluded that the null hypothesis Ho is not rejected therefore there is not enough evidence to claim that the arousal levels are not affected by meditation.