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 A CEREAL BOX WILL HAVE AN EFFECT ON CHILDREN TASTE RATINGS TO CEREAL.

_____

_____

2. What is the null hypothesis?

CARTOON ON A CEREAL BOX WILL NOT HAVE AN EFFECT ON CHILDREN TASTE RATING TO CEREAL. _____

3. Exactly what mean differences are you comparing here?

CONTROL GROUP MEAN AND EXPERIMENTAL GROUP MEAN.

_____
_____

4. What is the dependent variable? _TASTE RATING._____

5. What is the independent variable? _CARTOONS_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

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

9. Please write your results in a “literature” or “research study” format: The mean number for the group with the cartoon on the cereal was M = 6.33 with a SD = 2.059 and the mean for the group without the cartoon on the cereal box was M = 5.83 with a SD = 1.642. There was not a significant difference between the group. t (22) = -.658, P>.05

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?

_That meditation will have an effect on arousal levels.

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2. What is the null hypothesis?

_That meditation will not have an effect on arousal levels.

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3. What is the dependent variable? __Arousal Levels. _____

4. What is the independent variable? __Meditation. _____

5. What is the appropriate hypothesis test?

_Dependent Measure T-test.

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

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean

Pair 1	VAR00001	138.1000	10	31.27104	9.88877

VAR00002	130.1000	10	36.76487	11.62607

Paired Samples Test

		Paired Differences					t	df	Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			One-Sided p	Two-Sided p
Pair 1	VAR00001 - VAR00002	8.00000	12.49000	3.94968	-.93480	16.93480	2.025	9	.037	.073

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

Fail to reject the null hypothesis. _____

8. Please write the "statistical statement" for your SPSS results:

_t (9) = 2.025, P>.05_____

9. Please write your results in a "literature" or "research study" format: The mean number for the arousal Levels before meditation was M = 130 with a SD = 36.76. The mean number for Arousal Levels after meditation was M = 138 with a SD = 31.27. The data failed to reach a significance. T (9) = 2.025, P>.05

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