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?

That the cartoons on cereal boxes will have an effect on children to attribute higher taste ratings to the cereal

2. What is the null hypothesis?

The cartoons on the cereal boxes will have no effect on the children to attribute higher taste ratings to the cereal

3. Exactly what mean differences are you comparing here?

The difference between the children's ratings of the cereal with and without cartoons

4. What is the dependent variable? The ratings of the cereal

5. What is the independent variable? Cartoons on the cereal box

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							
	F	Sig.	t	df	Significance	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
					One-Sided p	Two-Sided p		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
1.08162Based on your SPSS results that you pasted above, please answer the following questions:

7. Please write your "statistical statement": t(4)=-.658, p>.05
8. Did you reject or fail to reject the null hypothesis? Fail to reject

9. Please write your results in a "literature" or "research study" format:
The mean for the group of children's ratings of the cereal without the cartoon was M=5.83 with a SD=1.642. The mean for the group of children's ratings of the cereal with the cartoon was M=6.33, and a SD= 2.06. The data showed that there was no significant difference between the two groups. t(4)=-.658, p>5

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 has an effect on arousal levels
2. What is the null hypothesis?
That meditation has no effect on the arousal levels

3. What is the dependent variable? Arousal levels

4. What is the independent variable? Meditation
5. What is the appropriate hypothesis test?
Within-subject design, dependent measures t-test

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

7. Based on your SPSS results, do you reject or fail to reject the null?
Reject
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 arousal level before meditation was M=130.10 with a SD= 36.76. The mean arousal love; after meditation was M=138.10 with a SD= 31.27. The data did show significance. It supported that meditation did have an effect on arousal levels, t(9)=2.025, p>.05