Name:

EDUC/PSY 6600 **Unit 0 Assignment**

Research Design & Analysis I **Introduction: APA, R, Stats**

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*Please complete the following exercises. Feel free to work with classmates, but each student must turn in **UNIQUE** work, not photocopies or identical replicates. When applicable, use **APA format** in communicating your results in text. **Show your work!** If any question involves any math at all, show your work. When it doubt, write it out. Always show more than you think you need.*

1) WRITE-UP - Textbook Problems (hand in the hard copy...this packet)

Cohen Chap		Exercises	Pts	Off
1	A	1, *2, *3, 4, 6, *7, 8	5	
	B	*2, 3, 7	5	

2) PUBLICATION – Supplementary Reading (upload both the pdf of article & your typed summary)

Your own research: Journal article		Pts	Off
Find & Upload	Find a **journal article** directly related to your area of research for which you are able to obtain an electronic copy (digital or scanned hard copy). Search for the term **ANOVA** specifically. Do **not** pay to get this article.	5	
Half Page	Read your article and summarize the **use or abuse of APA format**, focusing on the terms and concepts we covered in this unit.	5	

3) SUMMARY – Supplementary Reading (you may handwrite it here or type it and upload it to Canvas)

APA format – additional readings		Pts	Off
One Page	Read (AR1) the article by **Wilkinson et al., 1999** and **summarize**. Also, read (AR2) the **APA Publication Manual** focusing on pages 137-149 (pdf pages 16-28) but do **not** summarize (for future reference).	10	
2 fixes	Skim the **3 example articles** on Canvas and find and tell how to fix two errors (total, not 2 per article) that do not strictly follow the APA format	10	

4) R– Section C: Ihno's data set – add to the skeleton R notebook and knit to .pdf & upload

Cohen Chap		Exercises	Pts	Off
1	C	1, *2, 3, *4, 5, 6 (this will be used to start other unit homeworks)	10	

Grading		Earned	Possible
CORRECTNESS	*a subset of spot-checked items: must show work, especially items from back of book or done in class*		50
COMPLETENESS	*more than one item is missing or skipped: 25/50 roughly half the assignment is completed: 10/50*		50
			100

1 A	1. Scales of a variables

Give **two examples** of each of the following:

a. Nominal Scale		
b. Ordinal Scale		
c. Interval Scale		
d. Ratio Scale		
e. Continuous variable		
f. Discrete variable		

1 A	*2. Scales of a variables

What **type of scale** is being used for each of the following measures? *(check the box in front of the correct answer)*

a. Number of arithmetic problems correctly solved	☐ Nominal ☐ Ordinal ☐ Interval ☐ Ratio
b. Class standing (rank)	☐ Nominal ☐ Ordinal ☐ Interval ☐ Ratio
c. Type of phobia	☐ Nominal ☐ Ordinal ☐ Interval ☐ Ratio
d. Body temperature	☐ Nominal ☐ Ordinal ☐ Interval ☐ Ratio
e. Self-esteem (questionnaire)	☐ Nominal ☐ Ordinal ☐ Interval ☐ Ratio
f. Annual income in dollars	☐ Nominal ☐ Ordinal ☐ Interval ☐ Ratio
g. Theoretical orientation towards psychotherapy	☐ Nominal ☐ Ordinal ☐ Interval ☐ Ratio
h. Place in a dog show	☐ Nominal ☐ Ordinal ☐ Interval ☐ Ratio
i. Hear rate in beats per minute	☐ Nominal ☐ Ordinal ☐ Interval ☐ Ratio

1 A	∗3. Scales of a variables

What **type of scale** is being used for each of the following measures? *(check the box in front of the correct answer)*

a. Number of people in a social network	☐ Discrete ☐Continuous
b. Intelligence	☐ Discrete ☐Continuous
c. Size of vocabulary	☐ Discrete ☐Continuous
d. Blood pressure	☐ Discrete ☐Continuous
e. Need for achievement	☐ Discrete ☐Continuous

1 A	4. Population vs. Sample

a. Give two examples of a **population** that does not consist of individual people.

b. For each population described in (a), indicate how you might **obtain a sample**.

1 A	6. Example variables

Patients are randomly assigned to one of four types of psychotherapy. The progress of each subject is rated at the end of 6 months.

a. What is the **independent** variable?	
b. What is the **dependent** variable?	
c. What kind of **scale** is formed by the levels of the **independent** variable?	

1 A	*7. Observational vs. Experimental

What **kind of study** is each of the following: *(check the box in front of the correct answer)*

a. Comparing pet owners with those who don't own pets on an empathy measure.	☐ Observational ☐ Experimental
b. Comparing men and women with respect to performance on a video game that simulates landing a space shuttle	☐ Observational ☐ Experimental
c. Comparing participants run by a male vs. female experimenter with respect to the number of tasks completed in 1 hour	☐ Observational ☐ Experimental
d. Comparing the solution times of participants given a hint with those not given a hint.	☐ Observational ☐ Experimental

1 A	8. Statistic vs. Parameter

What **kind of value** is each of the following: *(check the box in front of the correct answer)*

a. The average income for 100 US citizens selected at random from various telephone books	☐ Statistic ☐ Parameter
b. The average income of citizens in the United States	☐ Statistic ☐ Parameter
c. The highest age among respondents to a sex survey in a popular magazine	☐ Statistic ☐ Parameter

1 B	*2. Summation Notation

Find the value of each of the following expressions: *(write your solution in the box)*

X = (2, 4, 6, 8, 10)
Y = (3, 5, 7, 9, 11)

a. $\Sigma (X + Y)$	
b. $\Sigma (X Y)$	
c. $(\Sigma X) (\Sigma Y)$	
d. $\Sigma(X^2 + Y^2)$	
e. $\Sigma (X - Y)$	
f. $\Sigma (X + Y)^2$	
g. $\Sigma (x + 7)$	
h. $\Sigma (Y – 2)$	

1 B	3. "Sum of the Squares" vs. "Square of the Sum"

Make up your own set of **five numbers** and demonstrate that $\Sigma X_i^2 \neq (\Sigma X_i)^2$

Your numbers: ☐ ☐ ☐ ☐ ☐

ΣX_i^2	$(\Sigma X_i)^2$

1 B	7. Rounding Decimals

Round off the following numbers to **FOUR** decimal places:

(Assuming digits to the right of those shown are zero):

a. 0.76995	
b. 3.141627	
c. 2.7182818	
d. 6.89996	
e. 1.000819	
f. 22.55555	

APA	Your own research: **Journal article you submitted** for the unit 0 homework

One HALF page summary:

Read your article and **summarize the use or abuse of APA format**, focusing on the terms and concepts we covered in this unit.

*(you may choose to **type** this summary and include a printed copy here instead of hand writing*
OR upload a typed document to CANVAS)

APA	**Additional Reading:** (AR1) article by **Wilkinson et al., 1999 (plus others if you want)**

One page summary:

*(you may choose to **type** this summary and include a printed copy here instead of hand writing OR upload a typed document to CANVAS)*

APA	Example Articles: find 2 error in 3 example journal articles

Skim the **3 example articles** on Canvas and find and tell how to fix two errors (total, not 2 per article) that do not strictly follow the APA format and describe how to fix each error.

Find Error	☐ Article 1 ☐ Article 2 ☐ Article 3 Location in article Describe mistake	☐ Article 1 ☐ Article 2 ☐ Article 3 Location in article Describe mistake
How to fix?		