

Name:

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
<b>Find &amp; Upload</b>	Find a <b>journal article</b> 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 <b>ANOVA</b> specifically. Do <b>not</b> pay to get this article.	5	
Half Page	Read your article and summarize the <b>use or abuse of APA format</b> , 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 <b>Wilkinson et al., 1999</b> and <b>summarize</b> . Also, read (AR2) the <b>APA Publication Manual</b> focusing on pages 137-149 (pdf pages 16-28) but do <b>not</b> summarize (for future reference).	10	
2 fixes	Skim the <b>3 example articles</b> 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
<b>CORRECTNESS</b>	<i>a subset of spot-checked items: must show work, especially items from back of book or done in class</i>		50
<b>COMPLETENESS</b>	<i>more than one item is missing or skipped: 25/50 roughly half the assignment is completed: 10/50</i>		50
		<div style="border: 2px solid black; width: 100px; height: 20px;"></div>	100

1	A	1. Scales of a variables
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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
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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	<input type="checkbox"/> Nominal	<input type="checkbox"/> Ordinal	<input type="checkbox"/> Interval	<input type="checkbox"/> Ratio
b. Class standing (rank)	<input type="checkbox"/> Nominal	<input type="checkbox"/> Ordinal	<input type="checkbox"/> Interval	<input type="checkbox"/> Ratio
c. Type of phobia	<input type="checkbox"/> Nominal	<input type="checkbox"/> Ordinal	<input type="checkbox"/> Interval	<input type="checkbox"/> Ratio
d. Body temperature	<input type="checkbox"/> Nominal	<input type="checkbox"/> Ordinal	<input type="checkbox"/> Interval	<input type="checkbox"/> Ratio
e. Self-esteem (questionnaire)	<input type="checkbox"/> Nominal	<input type="checkbox"/> Ordinal	<input type="checkbox"/> Interval	<input type="checkbox"/> Ratio
f. Annual income in dollars	<input type="checkbox"/> Nominal	<input type="checkbox"/> Ordinal	<input type="checkbox"/> Interval	<input type="checkbox"/> Ratio
g. Theoretical orientation towards psychotherapy	<input type="checkbox"/> Nominal	<input type="checkbox"/> Ordinal	<input type="checkbox"/> Interval	<input type="checkbox"/> Ratio
h. Place in a dog show	<input type="checkbox"/> Nominal	<input type="checkbox"/> Ordinal	<input type="checkbox"/> Interval	<input type="checkbox"/> Ratio
i. Hear rate in beats per minute	<input type="checkbox"/> Nominal	<input type="checkbox"/> Ordinal	<input type="checkbox"/> Interval	<input type="checkbox"/> Ratio

1	A	*3. Scales of a variables
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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	<input type="checkbox"/> Discrete <input type="checkbox"/> Continuous
b. Intelligence	<input type="checkbox"/> Discrete <input type="checkbox"/> Continuous
c. Size of vocabulary	<input type="checkbox"/> Discrete <input type="checkbox"/> Continuous
d. Blood pressure	<input type="checkbox"/> Discrete <input type="checkbox"/> Continuous
e. Need for achievement	<input type="checkbox"/> Discrete <input type="checkbox"/> Continuous

1	A	4. Population vs. Sample
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a. Give two examples of a **population** that does not consist of individual people.

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

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1	A	6. Example variables
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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 <b>independent</b> variable?	
b. What is the <b>dependent</b> variable?	
c. What kind of <b>scale</b> is formed by the levels of the <b>independent</b> variable?	

1	A	*7. Observational vs. Experimental
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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.	<input type="checkbox"/> Observational <input type="checkbox"/> Experimental
b. Comparing men and women with respect to performance on a video game that simulates landing a space shuttle	<input type="checkbox"/> Observational <input type="checkbox"/> Experimental
c. Comparing participants run by a male vs. female experimenter with respect to the number of tasks completed in 1 hour	<input type="checkbox"/> Observational <input type="checkbox"/> Experimental
d. Comparing the solution times of participants given a hint with those not given a hint.	<input type="checkbox"/> Observational <input type="checkbox"/> Experimental

1	A	8. Statistic vs. Parameter
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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	<input type="checkbox"/> Statistic <input type="checkbox"/> Parameter
b. The average income of citizens in the United States	<input type="checkbox"/> Statistic <input type="checkbox"/> Parameter
c. The highest age among respondents to a sex survey in a popular magazine	<input type="checkbox"/> Statistic <input type="checkbox"/> 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"
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Make up your own set of **five numbers** and demonstrate that  $\sum X_i^2 \neq (\sum X_i)^2$

Your numbers:

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$\sum X_i^2$

$(\sum X_i)^2$

1	B	7. Rounding Decimals
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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

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)*

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 <b>3 example articles</b> 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	<input type="checkbox"/> Article 1	<input type="checkbox"/> Article 2	<input type="checkbox"/> Article 3	
	Location in article			
How to fix?	Describe mistake			