Module 4: The Need for Psychological Science (pgs. 29-37)

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. V	What	is critical thinking?
ule	5: TI	ne Scientific Method and Description (pgs. 38-45)
. <u>I</u>	Define	e AND give an example for each of the following.
	•	Scientific method
	•	Theory
	•	Hypothesis
	•	Operational definitions
		Paplicate (no axample peeded for this one)

- Correlational methods ______
- Experimental methods ______
- 3. Read pg. 40-42. Complete the chart of advantages and disadvantages of each research method. While advantages and disadvantages are not clearly given, many of them are implied in the reading—you should have at least 2 per box! There is a table on pg. 53 that can also help you with this.

Research Method &	Advantages	Disadvantages
Definition		
Case Studies		
Naturalistic Observation		
Surveys		

- 4. Using the methods above, what would be the *best* research method to use to study each of these? Explain why.
 - People who have one or more hobbies report more job satisfaction than people with no hobbies.

Jnmarried cab drivers talk more with their customers than do married cab drivers.
fore men than women report fantasies of making large sums of money.
e an example of the wording effect in surveys.
a sampling bias? What happens if you have a sampling bias in a survey (or even an ent)?
eys and experiments start with a representative sample. For example, if the population I survey is all students in Wyoming, I would take 10 students from each high school in
ng. Those 10 students per school would be my representative sample and I would make they have the same age, gender, ethic, religious, etc. background as all the students in g. Define population.
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 ng. Those 10 students per school would be my representative sample and I would make they have the same age, gender, ethic, religious, etc. background as all the students in ag. Define population What is the population in this study that I want to do? Define random sample

- 1. What is a conclution. Give an example of t
- 2. Define the following:
 - Correlation Coefficient ______
 - Scatterplots ______

- Negative correlation ______
 - Give an example of a negative correlation.
- Positive correlation ______
 - Give an example of a positive correlation.
- 3. Correlation Coefficients range from -1 to +1. What does it mean when a score is very close to -1 or +1 (for example, the coefficient is -.98 or +.87)?

- 4. Give an example of where correlation does not prove causation.
- 5. What is an illusory correlation? Give an example.
- 6. Briefly define the following about experiments:
 - Experiment ______
 - Experimental Group ______
 - Control Group ______
 - Randomly Assign ______
 - Double-Blind Procedure ______
 - Placebo Effect ______
 - Independent Variable ______
 - Confounding Variable ______
 - Dependent Variable ______
- 7. Each of the following is a hypothesis of an experiment. For each one list the Independent Variable (IV), Dependent Variable (DV), Experimental Group (EG), and Control Group (CG).
 - "There will be a statistically significant difference in graduation rates of at-risk high-school seniors who participate in an intensive study program as opposed to at-risk high-school seniors who do not participate in the intensive study program."

 - CG: _____

•	"After watching a videotaped re-enactment of a bank robbery, people will recall more
	about the robbery while being questioned under hypnosis by a police officer as opposed to
	not being under hypnosis."

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0	EG:	
0	CG:	

• "A new drug will increase the maze running performance of older rats."

	0 IV:_	
	o DV:	
	∘ EG:_	
	• CG:	
8.	What is validity?	
9.	Why is random assig	gnment so important?

Module 7: Statistical Reasoning in Everyday Life (pgs. 56-63)

*Statistics is the hardest part of research methods in psychology—please read this carefully! If you need to take extra notes to be clear on terms, do that. O

1. Why is it important to understand basic statistics in psych?

2. Define the following:

Descriptive statistics ______

 \circ IV·

- Histogram ______
- Measures of central tendency
 - Mode _____
 - Mean_____
 - o Median_____
- Measures of variation
 - Range _____
 - Standard deviation _____
- 3. What does it mean when data has a skewed distribution? How does this happen? Why could this be misleading?

- 4. Why is standard deviation the most useful way of measuring how much scores deviate from one another?
- 5. What is the normal curve or normal distribution? <u>Draw it</u> below. Be sure to include everything in Figure 7.3, including the percentages under each section of the curve.

- 6. Let's see how much you understand this normal curve stuff! You take the Wechsler Adult Intelligence Scale test (a type of intelligence test we'll talk about next semester) and you score a 115. What <u>percentage</u> of people will score at or below your score?
- 7. Define inferential statistics.
- 8. What three principles should you keep in mind to make sure your generalizations are reliable?

- 9. Define statistical significance.
- 10. What is the number that psychologists stick to—for results to be statistically significant their odds of occurring by chance are less than ______ %?

Module 8: Frequently Asked Questions About Psychology (pgs. 64-70)

1. What is culture? Why does culture and gender matter in psychology?

Read the section on ethics animal research (pgs. 66-67) to help you respond to the following scenario.

2. Having read the ethics section explaining the question of animal research, would you approve the following research? Why or why not?

Professor King is a psychobiologist working on the frontiers of a new and exciting research area of neuroscience canned brain grafting. Research has shown that neural tissue can be removed from the brains of monkey fetuses and implanted into the brains of monkeys that have suffered brain damage. The neurons seem to make the proper connections and sometimes are effective in improving performance in brain-damaged animals. These experiments offer important animal models for human degenerative diseases such as Parkinson's and Alzheimer's. Professor King wants to transplant tissue from fetal monkey brains into the entorhinal cortex of adult monkeys; this is the area of the human brain that is involved with Alzheimer's disease.

The experiment will use 20 adult rhesus monkeys. First, the monkeys will be subjected to ablation surgery in the entorhinal cortex. This procedure will involve anesthetizing the animals, opening their skulls, and making lesions using a surgical instrument. After their recovery, the monkeys will be tested on a learning task to make sure their memory is impaired. Three months later, half of the animals will be given transplant surgery. Tissue taken from the cortex of monkey fetuses will be implanted into the area of the brain damage. Control animals will be subjected to the sham surgery, and all animals will be allowed to recover for two months. They will then learn a task to test the hypothesis that the animals having brain grafts will show better memory than the control group.

Professor King argues that this research is in the exploratory stages and can only be done using animals. She further states that by the year 2030 about 72 million Americans will have Alzheimer's disease and that her research could lead to a treatment for the devastating memory loss that Alzheimer's victims suffer.

3. Describe the four basic ethical principles developed by the American Psychological Association (APA) that guide researchers with human participants.

4. What does an IRB do? Why is it important?