RESEARCH METHODS

1. Explain the two assumptions of science?

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2. How does science differ from pseudoscience?

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3. In the backmasking Satanic messages experiment, two variables were included; the type of suggestion about messages given to participants and the percentage of participants hearing Satanic related words. Which is the independent and dependent variable?

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4. What are the two characteristics of replication?

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5. List all the types of reliability and validity?

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6. What is the difference between a confound and an artifact? Which kind of validity does each affect?

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7. Describe the strengths and weaknesses of cross-sectional and longitudinal research.

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8. What are the benefits and limitations of conducting a survey to UNSW students as a method of data collection?

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9. What is selection bias and what is a method that can be used to minimise it?

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10. What is the difference between an attribute variable and a natural variable? Give an example each.

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11. Psychoanalysts at two different hospitals were asked to judge the well-being of a young man being interviewed on videotape. The psychoanalysts at a publicly-funded hospital were assigned to the Normal Group and psychoanalysts at a privately-funded hospital were assigned to the Abnormal Group. In the Normal Group, the doctors were told that the young man was a job applicant; in the Abnormal Group, the doctors were told that he was a patient. The mean adjustment rating by psychoanalysts in the Normal Group was 7 out of 8 compared to a 3.5 out of 8 rating by doctors in the Abnormal Group. What improvement could be made to this experiment and why?

12. What is meant by scientific misconduct? Give ONE example of this.

13. Name the three ethical factors that are considered when performing animal research and explain what each ethic means. (hint: three Rs)

STATISTICS

1. Your cohort receives their marks back from a particularly long midterm exam, and find out that the scores are normally distributed with an average of 70 marks and a standard deviation of 5 marks. What score would put you in the 84th percentile? Explain your answer.

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2. Distinguish between Nominal Scale and Interval Scale. Give examples.

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3. You are helping in a social psychology lab and interview strangers near the coffee cart about how many coffees they drink on average a week. The results indicate that this is positively skewed, unimodal distribution with a median of 8. Without knowing the actual values of the mode and mean, which values do you predict will be the highest and lowest relative to the median? Explain why.

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4. Distinguish between Discrete and Continuous data. Give examples.

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5. What would happen to the mean and the standard deviation if the data set changes from: 6,2,3,6,5,8 to 7,-1,1,7,5,11. Describe how the shape of the normal distribution changes.

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6. In what situation would it be preferable to make a Type II error? Explain your answer.

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7. What is the relationship between the p-value and the α-value?

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8. You notice that students who live closer to UNSW are more likely to be late to class. What variables would you measure to find a correlation of r = -0.7?

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9. In a class of 25 students, 7 scored above 70% in the report. You find out that your friend scored 70% in their report. What is their percentile rank? Explain your answer.

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10. Researchers wanted to test whether children across cultures would respond aggressively to a Bobo doll if there was an aggressive role model. They chose a group of school children from China and a group of school children from Australia to do their experiment. What type of design measures were used in this experiment? Explain your answer.

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11. It was found that 95% of phones produced in 2019 have a screen size that is normally distributed between 16.8-18.8cm^2. What is the mean and standard deviation? Explain your answer.

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12. Referring to the previous question, your friend tells you that iPhones are better than Samsung phones as iPhone screen sizes are statistically significantly larger than the average screen size of phones produced in 2018 ($\alpha=0.01$). What would the null and the alternative hypothesis be to test your friend's theory.

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13. Referring to the previous two questions, your friend decides to test whether iPhones in general have larger screen sizes than Samsung phones by surveying psychology students enrolled in PSYC1111. The results of the study reveal that the proportion of iPhone screen sizes is significantly lower ($p<0.05$) than Samsung phone screen sizes. What additional information would you need to know about the sample that would help you decide whether you accept the findings from your friend's study?

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