Past Paper 1 Q's with Research Methods

2017

1.

Adam and Lauren have carried out research into obedience as part of their A level Psychology course. They investigated whether males or females are more obedient to authority. They approached the first 25 male and 25 female students who were available at the time and asked them to complete a questionnaire. Each student who took part was given a scenario about whether or not they would follow a female teacher's instruction to pick up litter.

Table 1 shows the number of males and females who said they would or would not follow the instruction.

	Female	**Male**
Number of students who would follow the teacher's instruction	16	10
Number of students who would not follow the teacher's instruction	9	15

Table 1

(a) Identify the sampling method that Adam and Lauren used in their study.

(1)

(b) State a fully operationalised directional (one-tailed) hypothesis for Adam and Lauren's study.

(2)

(c) Explain **one** improvement that could be made to the procedure of Adam and Lauren's research.

(2)

2.

Louise is interested to see whether there is a difference between the number of pictures recalled by children with dyslexia and by those who do not have dyslexia. The children have been given a short recall task to see how many of the pictures they can remember out of 20.

Table 2 shows the raw data from the experiment.

Participant number	Number of pictures recalled by children with dyslexia	Number of pictures recalled by children without dyslexia
1	16	11
2	8	9
3	5	7
4	12	17
5	14	4
6	17	3
7	7	9
8	11	11
9	6	6
10	13	12
Range		

Table 2

(a) Calculate the range of scores Louise gathered in both conditions of her study and complete **Table 2** above.

(2)

(b) Calculate the standard deviation for the number of pictures recalled by children with dyslexia. Show your working and give your answer to two decimal places.

(4)

Standard deviation (sample estimate)

$$\sqrt{\left(\frac{\sum(x-\bar{x})^2}{n-1}\right)}$$

3.

Nadiya and Tamal are analysing data they have gathered about students' exam scores and the number of missed classes.

Table 3 shows the raw data from Nadiya and Tamal's study.

Exam score	Number of missed classes
70	8
80	6
40	18
20	20
95	3
100	4
50	14
65	10
65	12
55	12

Table 3

Nadiya and Tamal used Spearman's rho to analyse their data.

(c) State **two** reasons why they used Spearman's rho.

(2)

2018

4.

Tim and Laura are undertaking a practical investigation using a questionnaire into in-group favouritism at their college.

(a) Suggest **one** open question and **one** closed question Tim and Laura could use in their questionnaire.

(2)

(b) When conducting an investigation using a questionnaire a pilot study can be carried out. A pilot study is a small-scale preliminary version of a study which is carried out before the full-scale version of a study.

Suggest **two** reasons why Tim and Laura should carry out a pilot study before conducting their questionnaire.

(2)

5.

Mr Robinson has asked geography students and mathematics students to take part in an experiment. He asked both sets of students to learn a list of 20 words. The mathematics students were given an interference task before retrieval of the word list. The geography students did not have an interference task.

Table 1 shows the results of Mr Robinson's experiment.

Participant	Number of words correctly retrieved (out of 20) by mathematics students	Number of words correctly retrieved (out of 20) by geography students
A	15	9
B	7	10
C	9	5
D	14	8
E	12	8
F	16	5
G	10	8
H	9	11
I	9	13
J	15	8
Mean		

Table 1

(a) Calculate the mean number of words retrieved by the mathematics and geography students and complete **Table 1** with your answers.

You **must** give your answers to one decimal place.

(1)

(b) Explain which statistical (inferential) test Mr Robinson would have used to analyse the data.

(2)

(c) Explain **one** strength of Mr Robinson using quantitative data in his experiment.

(2)

6.

Rafiq carried out a correlational study to investigate whether there was a relationship between age and number of hours of sleep per night.

(a) Complete **Table 2** and calculate the Spearman's rank correlation coefficient for Rafiq's study.

(4)

Age	Rank 1	Number of hours sleep	Rank 2	d	d^2
17	2.5	10	6		
17	2.5	11	7		
20	4	6	2.5		
24	6	7	4		
21	5	4	1		
16	1	9	5		
40	7	6	2.5		
				Total:	

Table 2

Spearman's rank correlation coefficient

$$1 - \frac{6\sum d^2}{n(n^2-1)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	**0.025**	**0.01**	**0.005**	**0.0025**
	Level of significance for a two-tailed test				
N	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

(b) Rafiq used a non-directional (two-tailed) hypothesis.

Explain whether Rafiq's data were significant at $p<0.05$ and if the research hypothesis should be accepted.

(2)

7.

When studying learning theories you will have covered the observational research method for human research.

Evaluate the usefulness of observational methods for studying human behaviour.

(8)

2019

8.

Fuchsia was interested to see whether location affected prejudice. She is planning to visit three towns in her area and ask participants questions to judge how prejudiced they are.

(a) Describe how Fuchsia could recruit her participants using a volunteer sampling technique.

(2)

(b) Fuchsia intends to use thematic analysis to analyse her data.

Explain **one** strength and **one** weakness of Fuchsia using thematic analysis to analyse her data.

(4)

(c) Fuchsia has drafted some open-ended questions that she plans to use, which are shown in **Figure 1**.

My prejudice questions

1. *If someone called you a racist, what would you say?*
2. *What do you think about people different to yourself?*
3. *Research has indicated that people who have social dominance orientation and right-wing authoritarianism may be more prejudiced than people who score higher in openness, and agreeableness. What do you think about this?*

Figure 1

Explain **one** improvement Fuchsia could make to the questions she has drafted shown in **Figure 1**.

(2)

9.

As part of your psychology course, you were required to carry out a practical investigation when studying biological psychology.

(a) State the research hypothesis for your practical investigation in biological psychology.

(2)

(b) As part of your practical investigation when studying biological psychology, you were required to carry out a statistical test.

Describe the results of the statistical test you carried out for your practical investigation in biological psychology.

(2)

(c) Explain **one** strength of the practical investigation you carried out when studying biological psychology.

(2)

(d) Explain **one** improvement you could make to the practical investigation you carried out when studying biological psychology.

(2)

10.

Malik carried out an observation in a local cinema to investigate which films males and females watch. Malik stood near two screen entrances where he could not be seen and tallied whether males and females entered the screen to watch either a horror film or a comedy film.

(a) Identify the type of observation that Malik used in this study.

(1)

Table 1 shows the number of males and females who watched either a horror film or a comedy film at the local cinema.

	Comedy Film	**Horror Film**
Males	𝍸 𝍸 //	𝍸
Females	𝍸 //	𝍸 𝍸

Table 1

(b) Complete **Table 2** to calculate the chi-squared test for Malik's study to **two** decimal places.

(4)

		Observed	**Expected**	**O-E**	**$(O-E)^2$**	**$(O-E)^2/E$**
Males	**Comedy Films**	12	9.5			
	Horror Films	5	7.5			
Females	**Comedy Films**	7	9.5			
	Horror Films	10	7.5			
					Chi-squared =	

Table 2

Chi-squared distribution formula

$$X^2 = \sum \frac{(O-E)^2}{E} \qquad df = (r-1)(c-1)$$

Critical values for chi-squared distribution

	Level of significance for a one-tailed test					
	0.10	**0.05**	**0.025**	**0.01**	**0.005**	**0.0005**
	Level of significance for a two-tailed test					
df	**0.20**	**0.10**	**0.05**	**0.025**	**0.01**	**0.001**
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

(c) Malik had a two-tailed (non-directional) hypothesis with df = 1 and used p=0.05 as his level of significance.

Determine whether there is a significant difference between male and female film choice.

(1)

(d) Malik used quantitative data for his study into film choice at the local cinema.

Explain **one** weakness of using quantitative data for Malik's study.

(2)

2020

11.

Jake wanted to find out if people obeyed the 30 miles per hour (mph) speed restriction in his local town. He recorded the driving speed of 200 cars on a Saturday afternoon and plotted the data on a frequency distribution curve.

(a) Identify the measure of central tendency shown at data points **A**, **B** and **C** on the frequency distribution curve for Jake's data, shown in **Figure 1**.

(3)

A frequency distribution curve to show the driving speed of cars (mph) recorded on a Saturday afternoon

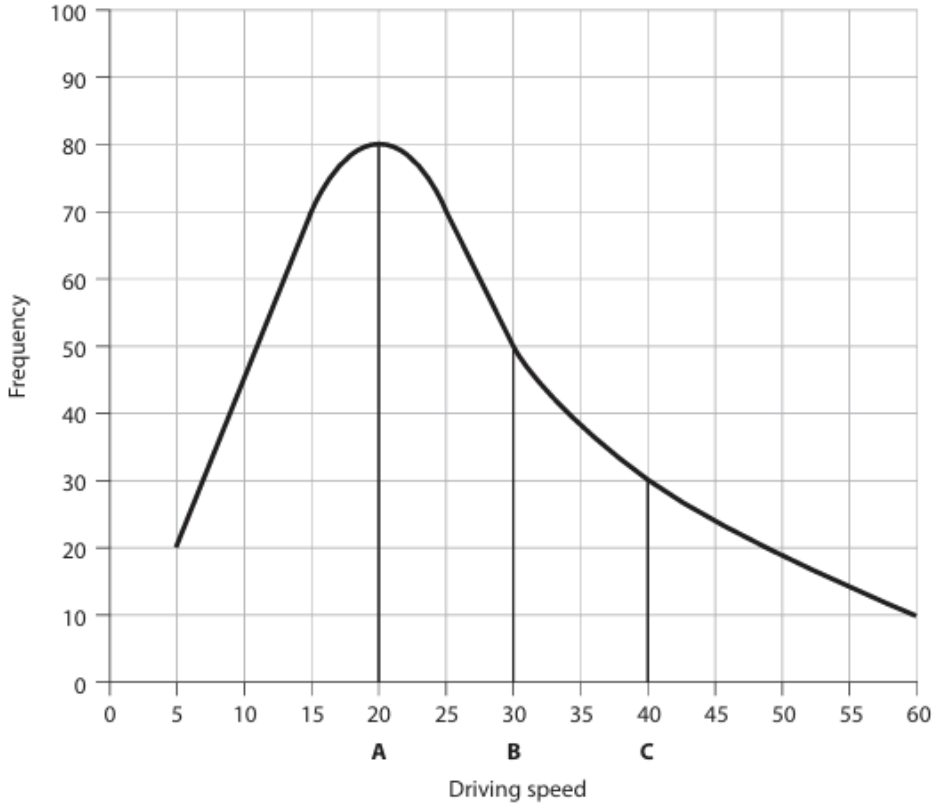

Figure 1

(b) Interpret the data Jake gathered about driving speeds in his local town.

(1)

12.

Charles investigated the influence of an interference task on recall from short-term memory.

The same participants had to recall a word list after an interference task (Condition A) and later recall a word list with no interference task (Condition B).

The results from Charles's investigation are shown in **Table 1**.

(a) Complete **Table 1** and calculate the Wilcoxon Signed Ranks test for Charles's study.

(4)

Participant	Recall after an interference task (Condition A)	Recall with no interference task (Condition B)	Difference	Rank	Rank if positive	Rank if negative
A	8	12				
B	9	11				
C	6	12				
D	8	8				
E	10	9				
F	10	11				
G	5	10				
H	5	4				
				Total:		

Table 1

Wilcoxon Signed Ranks test process

- Calculate the difference between two scores by taking one from the other
- Rank the differences giving the smallest difference Rank 1

  Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference
- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)
- N is the number of scores left, ignore those with 0 difference

Critical values for the Wilcoxon Signed Ranks test

	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
n	0.1	0.05	0.02
N=5	0	-	-
6	2	0	-
7	3	2	0
8	5	3	1
9	8	5	3
10	11	8	5
11	13	10	7
12	17	13	9

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

(b) Using the Wilcoxon T value that you calculated determine whether Charles's data were significant at $p \leq 0.025$ for a directional (one-tailed) hypothesis.

(1)

13.

In your studies of learning theories you will have conducted a practical investigation.

(a) Describe the procedure from your learning theories practical investigation.

(3)

(b) Explain **two** improvements that you could make to your learning theories practical investigation.

(4)

2021

14.

Evaluate the use of questionnaires for research in social psychology.

(8)

15.

Ken is planning to research whether the time of day has an impact on working memory processing speed. He intends to use high school students from the city where he lives for his research.

(a) Describe how Ken would gather a stratified sample for his research.

(2)

(b) To test working memory processing speed, Ken intends to ask his participants to complete a series of mathematical calculations in the morning. They will then return to complete another set of mathematical calculations in the afternoon.

Ken will time (in seconds) how long each participant takes to complete the task in the morning and in the afternoon to see if there is a difference.

Explain which statistical test Ken would use for his data.

(2)

16.

Oscar investigated whether there was a relationship between attitudes to recreational drug use and parts of the personality (id, ego and superego) according to Freud.

Participants completed a personality questionnaire to determine how strongly they were dominated by the 'id'. The questionnaire was scored out of 10, with 10 being strongly dominated by the 'id'.

They also completed a questionnaire about how they felt about recreational drug use in society. The questionnaire was scored out of 10, with 10 being completely in favour of recreational drug use.

(a) Complete **Table 1** and calculate the Spearman's rank correlation coefficient for Oscar's study.

(4)

Personality score	Rank 1	Attitude to recreational drug use score	Rank 2	d	d^2
2	1	3	1.5		
8	6	9	7		
5	3	6	4		
6	4.5	7	6		
9	7.5	10	8		
3	2	3	1.5		
6	4.5	6	4		
9	7.5	6	4		
				Total:	

Table 1

Spearman's rank correlation coefficient

$$1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	**0.025**	**0.01**	**0.005**	**0.0025**
	Level of significance for a two-tailed test				
N	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

(b) Using the critical values table for Spearman's rank, determine the lowest level of significance Oscar could use for his results to be significant for a directional (one-tailed) hypothesis.

(2)

17.

Zoë investigated the use of operant conditioning in training two different animals. She trained squirrels and mice to successfully complete a maze that she had designed.

Zoë used positive reinforcement with the squirrels and mice, by giving each animal two acorns every time it found the way out of the maze. She recorded the length of time it took each animal to complete the maze successfully.

(a) Using the Scientific Procedures Act (1986), state **two** considerations Zoë would have made for her research with squirrels and mice.

(2)

(b) State a fully operationalised directional (one-tailed) experimental hypothesis for Zoë's investigation.

(2)

(c) Explain **one** strength of Zoë's research in terms of reliability.

(2)

(d) Explain **one** improvement that could be made to Zoë's investigation in terms of validity.

(2)

2022

18.

In your studies of social psychology, you will have conducted a practical investigation.

(a) Describe how you gathered qualitative data in your social psychology practical investigation.

(2)

(b) Describe how you gathered quantitative data in your social psychology practical investigation.

(2)

(c) Explain **one** improvement you could make to your social psychology practical investigation.

(2)

19.

Belinda investigated whether personality had an impact on levels of obedience at work. She selected 10 senior managers from different companies, five with high scores for authoritarian personality traits and five with low scores.

The participants were asked whether they would dismiss an unpopular employee based on false allegations if the company director told them to.

The results of the investigation are shown in **Table 1**.

Authoritarian personality score	Would dismiss the employee	Would not dismiss the employee
High	4	1
Low	1	4

Table 1

Draw a bar chart to show the number of participants with high scores for authoritarian personality who would and would not dismiss the employee.

(3)

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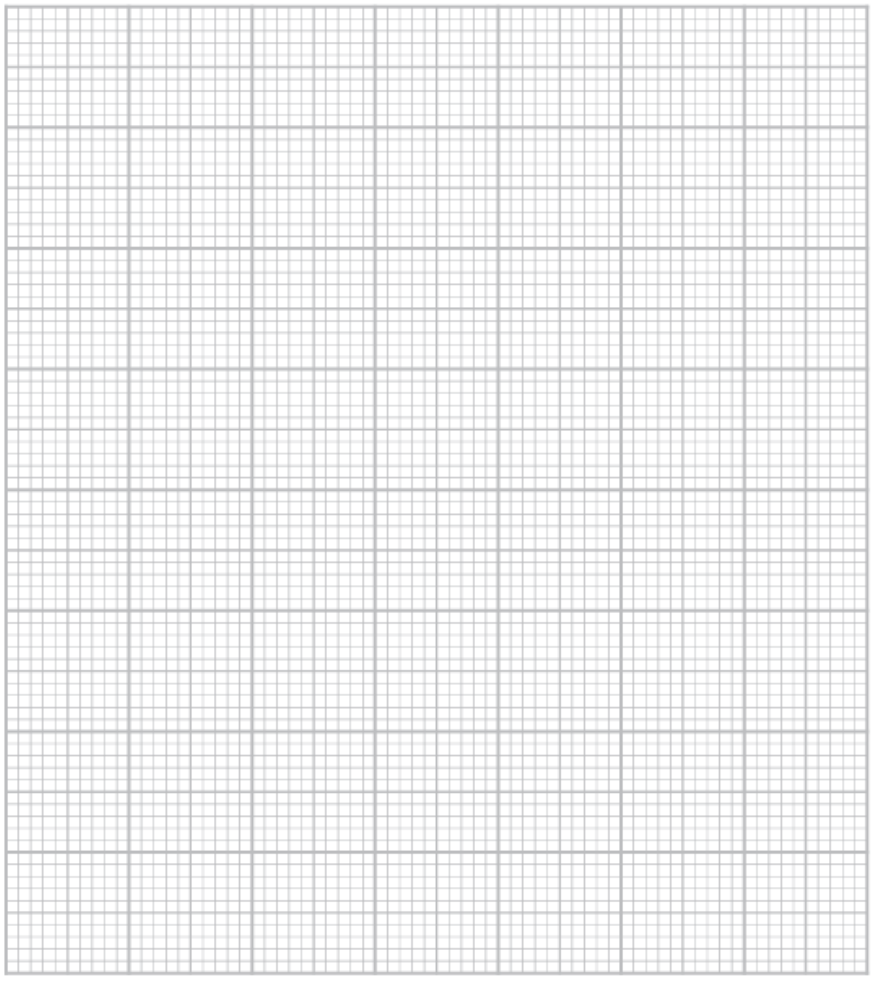

20.

Lei investigated the effect of word length on short-term memory capacity. She used a volunteer sampling technique to gather 20 participants. Lei allocated her participants randomly to one of two conditions.

- Condition A: participants are given 14 monosyllabic words (words with only one syllable such as cat, tub, or red) to learn in 30 seconds.
- Condition B: participants are given 14 polysyllabic words (words with more than one syllable such as elephant, happiness, or carpet) to learn in 30 seconds.

Lei recorded the number of words recalled correctly by participants.

(a) State the fully operationalised independent variable (IV) and dependent variable (DV) in Lei's investigation.

(2)

(b) Complete **Table 2** and calculate the Mann-Whitney U for the results of Lei's investigation. (4)

Condition A: monosyllabic words		**Condition B: polysyllabic words**	
Number of words recalled correctly	**Rank**	**Number of words recalled correctly**	**Rank**
9	16.5	5	5
8	13.5	7	11
9	16.5	6	8
7	11	5	5
10	19	6	8
9	16.5	9	16.5
7	11	3	2
6	8	5	5
8	13.5	4	3
11	20	2	1
Total		**Total**	

Table 2

Mann-Whitney U test formulae

$$U_a = n_a n_b + \frac{n_a(n_a+1)}{2} - \sum R_a$$

$$U_b = n_a n_b + \frac{n_b(n_b+1)}{2} - \sum R_b$$

(U is the smaller of U_a and U_b)

Critical values for the Mann-Whitney U test

	N_b															
N_a	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.05$ (one-tailed), $p \leq 0.10$ (two-tailed)																
5	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
6	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
7	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39
8	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47
9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
10	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62
11	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69
12	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77
13	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84
14	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92
15	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100
16	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107
17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115
18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123
19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130
20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

(c) Using the Mann-Whitney U value that you calculated determine whether Lei's data were significant at $p \leq 0.05$ for a directional (one-tailed) hypothesis.

(1)

21.

Tabitha wanted to investigate whether there is a difference in brain activity when people are exposed to aggressive stimuli and non-aggressive stimuli. She decided to gather a sample of female participants aged between 20 years old and 30 years old.

(a) Describe how Tabitha could use a volunteer sampling technique to gather participants for her investigation.

(2)

(b) Tabitha decides to use a PET brain-scanning technique for her investigation.

Describe how Tabitha could use a PET brain-scanning technique for her investigation.

(3)

(c) Explain **one** strength of Tabitha using a PET brain-scanning technique for her investigation.

(2)

(d) Explain **one** improvement that could be made to Tabitha's choice of participants.

(2)

2023

22.

Jack wanted to investigate whether males were prejudiced towards females who worked in stereotypical male professions, such as building work and lorry driving.

He asked five males to answer a questionnaire about gender roles. Participant responses were scored out of 10 for gender prejudice, with 10 indicating a very strong gender prejudice, and 0 indicating little or no gender prejudice.

Jack's results are shown in **Table 1**.

Participant	Gender prejudice score (out of 10)
A	10
B	8
C	9
D	4
E	6

Table 1

(a) Calculate the standard deviation for the gender prejudice score using the data in **Table 1**. Show your working and give your answer to two decimal places.

(4)

Standard deviation (sample estimate)

$$\sqrt{\left(\frac{\sum(x-\bar{x})^2}{n-1}\right)}$$

(b) Calculate the range for the gender prejudice score.

(1)

23.

In your studies of cognitive psychology, you will have completed a practical investigation.

(a) State the fully operationalised independent variable (IV) and the fully operationalised dependent variable (DV) for your cognitive psychology practical investigation.

(2)

(b) Explain **two** strengths of your cognitive psychology practical investigation.

(4)

(c) Explain **one** improvement you could have made to your cognitive psychology practical investigation.

(2)

24.

Amelia is using a correlational research method to investigate whether there is a relationship between recreational drug use and aggression. She intends to study individuals who have been arrested for violent offences.

(a) Describe how Amelia could use a random sampling technique to gather a sample of 30 participants for her correlational research.

(2)

(b) Explain **one** weakness of Amelia using a correlational research method for her investigation about recreational drug use and aggression.

(2)

25.

Archie conducted an observation to see whether boys are more likely to play with gender stereotypical toys than girls. He visited a pre-school where he observed children aged between three and four years old playing with toys.

(a) Describe how Archie may have gained informed consent to conduct his observation.

(2)

Archie recorded the first choice of toy that each boy and girl at the pre-school chose to play with.

Table 2 shows the number of boys and girls that Archie recorded as playing with a gender stereotypical boys' toy or gender stereotypical girls' toy.

Gender of child	**Type of toy played with**	
	Stereotypical boys' toy	**Stereotypical girls' toy**
Boys	8	12
Girls	10	11

Table 2

(b) Complete **Table 3** to calculate the chi-squared test for Archie's observation. You must give your answer to **two** decimal places.

(4)

		Observed	Expected	O–E	$(O–E)^2$	$(O–E)^2/E$
Boys	**Stereotypical boys' toy**	8	8.78			
	Stereotypical girls' toy	12	11.22			
Girls	**Stereotypical boys' toy**	10	9.22			
	Stereotypical girls' toy	11	11.78			
					Chi-squared =	

Table 3

Chi-squared distribution formula

$$X^2 = \sum \frac{(O-E)^2}{E} \qquad df = (r-1)(c-1)$$

Critical values for chi-squared distribution

	Level of significance for a one-tailed test					
	0.10	**0.05**	**0.025**	**0.01**	**0.005**	**0.0005**
	Level of significance for a two-tailed test					
df	**0.20**	**0.10**	**0.05**	**0.025**	**0.01**	**0.001**
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

(c) Archie had a one-tailed (directional) hypothesis with *df*=1 and used p=0.05 as his level of significance.

Determine whether there is a significant difference between boys and girls in the choice of gender stereotypical toys.

(1)

2024

26.

Noah investigated locus of control as a personality factor affecting obedience. He sampled 24 participants. Noah gave each participant a questionnaire containing 30 Likert scale questions to test whether they demonstrated traits for an internal or external locus of control.

Noah found that $\frac{18}{24}$ participants demonstrated traits of an internal locus of control.

(a) Convert Noah's findings from a fraction into a percentage.

(1)

(b) Out of the 24 participants, Noah found 18 had traits of an internal locus of control compared to 6 who had traits of an external locus of control.

Convert Noah's findings about those who had an internal locus of control to those who had an external locus of control into a ratio. You must express your answer in the lowest form.

(1)

(c) Noah's sample of participants included 8 males.

Calculate the male participants as a fraction of all participants. You must express your answer in the lowest form.

(1)

27.

Suzanne conducted an interview with 20 participants about their likelihood of obeying an authority figure. She described several scenarios of situations where instructions had been given by a person in authority.

Suzanne first asked her participants to state 'Yes' or 'No' as to whether they would follow the instructions in each scenario. She then asked further questions about why they would or would not obey based on their response.

Explain **one** strength and **one** weakness of Suzanne using an interview to ask about participants' likelihood of obeying an authority figure. **(4)**

28.

Amari carried out a correlational study to investigate whether there was a relationship between the hours someone spends on social media in a day and the hours of sleep they get per night.

The results from Amari's investigation are shown in **Table 1**.

(a) Complete **Table 1** and calculate the Spearman's rank correlation coefficient for Amari's investigation.

(4)

Hours spent on social media	Rank 1	Hours of sleep per night	Rank 2	d	d^2
4	2.5	9	5.5		
6	4	8	4		
3	1	9	5.5		
8	6	7	2.5		
7	5	6	1		
9	7	7	2.5		
4	2.5	10	7		
				Total:	

Table 1

Spearman's rank correlation coefficient

$$1 - \frac{6\sum d^2}{n(n^2-1)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	**0.025**	**0.01**	**0.005**	**0.0025**
	Level of significance for a two-tailed test				
N	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

(b) Using the Spearman's rank correlation coefficient that you calculated determine whether Amari's data were significant at $p \leqslant 0.05$ for a non-directional (two-tailed) hypothesis.

(1)

29.

Mischa is investigating the healthy and unhealthy food choices made by people and decides to use the observational method. For one day, he observed the food purchased by customers in a local café. Mischa gathered quantitative data in his observation.

(a) Describe how Mischa could use tallying to gather his quantitative data.

(2)

(b) Describe the sampling technique used by Mischa to gather the participants for his observation.

(2)

(c) Explain **two** improvements Mischa could make to his investigation.

(4)

Check individual mark schemes for answers