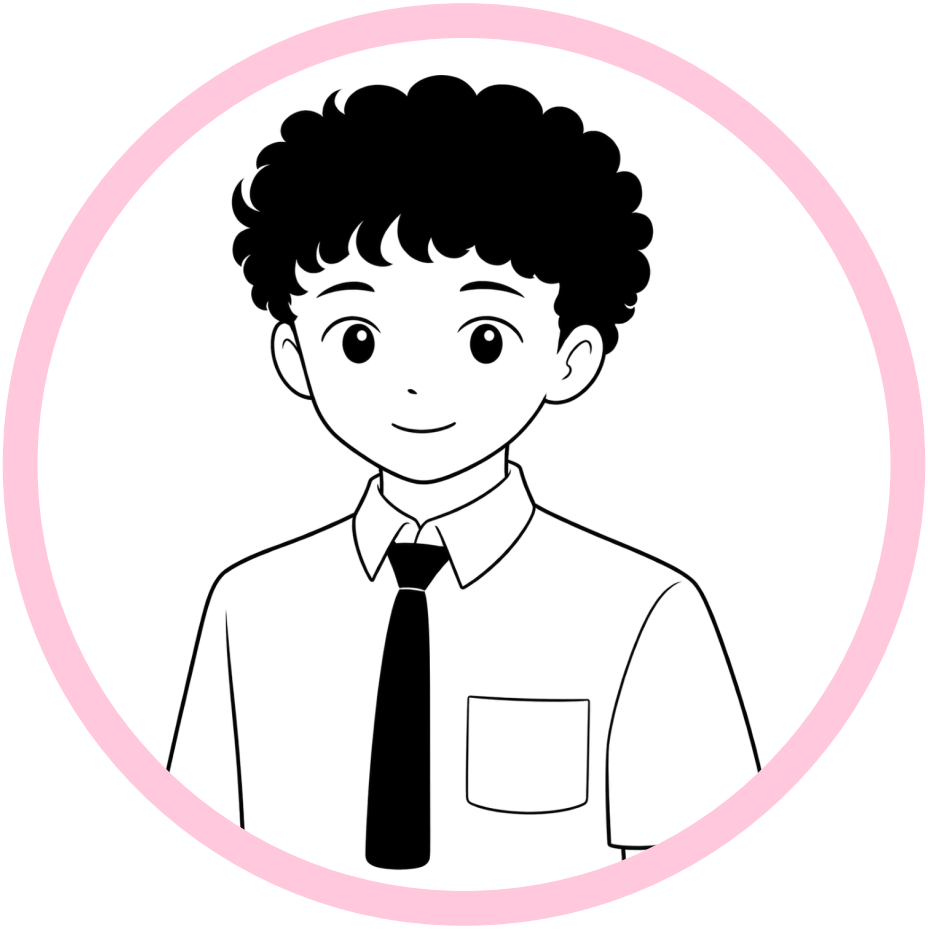
AQA A-LEVEL PSYCHOLOGY · 7182

PSYCHOLOGY



EXAM QUESTION PACK

3.2.3.2 DATA HANDLING AND ANALYSIS

SCORE	PERCENTAGE
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Q1.

A head teacher wanted to increase recycling in his school. He arranged for the canteen to have three bins, one for cardboard, one for plastic and one for food waste. A month later, a psychology teacher decided to see if the students were recycling. One lunch break she watched different students going to the bins. Each time, she wrote down which of the three types of waste they recycled. She positioned herself so that the students could not see her but so that she had a clear view of the bins.

(a) Identify **one** type of observation being used in this investigation.
Justify your answer.

(2)

(b) Explain the sampling technique the teacher used to record her observations.

(2)

As the different year groups had lunch at different times, the teacher was able to present her results as three year groups, as shown in the table below.

The number of items each year group recycled

Year group	Cardboard	Plastic	Food
7-9	20	35	10
10-11	18	25	7
12-13	12	15	5

(c) What do the results in the table suggest about the recycling initiative?
Refer to the data in the table above in your answer.

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(4)

(d) Explain **one** way in which the design of this observation could have been improved.

(2)

(Total 10 marks)

Q2.

A psychologist was at a concert where someone threw a bottle onto the stage and seriously injured one of the band members. The psychologist decided to use this incident to investigate the accuracy of eye witness testimony. She asked 10 people who saw the bottle being thrown, if they would allow her to interview them about this. A week later she interviewed each witness separately in a quiet room and asked them the same closed questions about what they had seen. She recorded their answers. It took her two and a half hours in total to interview the 10 witnesses.

(a) Calculate how many hours it would have taken the psychologist to interview all 1000 people who were at the event. Show your workings.

(2)

(b) Identify **one** type of data the psychologist collected in this study. Explain your answer.

(2)

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(c) Investigator effects may influence this study. Explain how the investigation might be modified to reduce these effects.

_____

_____

_____

_____

(2)

(d) The psychologist submitted a report of her investigation to a journal for peer review. What would she expect the process to involve?

_____

_____

_____

_____

(2)

(Total 8 marks)

Q3.

A researcher carried out an overt observation study of social learning. For one week the helping behaviour of children in a playgroup was recorded. All the children then saw a short film in which a child was praised for tidying up toys. For the following week the helping behaviour of the same children in the playgroup was recorded.

(a) Which of the following statements is the best description of an overt observation study?

Shade **one** box only.

A The researcher becomes a member of the group whose behaviour is being observed. ⬭

B The researcher uses a structured procedure in which behaviour is watched and recorded. ⬭

C The researcher watches and records behaviour in the setting it would normally occur. ⬭

D The researcher watches and records behaviour of a group that knows it is being observed. ⬭

(1)

(b) Briefly discuss **one** way in which a covert observation of children might be more beneficial than an overt observation.

_____

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(3)

(c) At the end of the observation study the researcher used a sign test to see if the behaviour of the children was more helpful, less helpful or the same after seeing the film than it was before they had seen the film.

Explain why the researcher decided the sign test would be an appropriate statistical test to use on the data from this study.

(4)

(Total 8 marks)

Q4.

A researcher was interested in the relationship between the number of hours a course was taught using a computer program and the satisfaction of the students on the course.

As part of his research he conducted a pilot study as follows. A topic from a business studies course was divided into 10 equal one-hour sessions.

Eleven students who were matched for their high level of interest in business studies took part in the study.

All 11 students completed all 10 hours of the topic. They were taught either completely online, with a combination of online teaching and classroom teaching, or just in a classroom.

Each student was allocated a letter, from A to K randomly. This determined the number of hours they studied online and the number of hours they studied in a classroom. The combinations are shown in **Table 1**.

Table 1: The numbers of hours each student (labelled A – K) studied the topic online and in a classroom with a teacher

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	A	B	C	D	E	F	G	H	I	J	K
Number of online hours	10	9	8	7	6	5	4	3	2	1	0
Number of classroom hours	0	1	2	3	4	5	6	7	8	9	10

(a) Explain why it was important to match the students on their high level of interest in business studies.

(2)

(b) Suggest **one** other variable for which the researcher should have matched the students. Explain how this might have affected the satisfaction scores if it was not controlled.

(2)

(c) Outline **one** benefit of allocating the students randomly to the different numbers of online hours and classroom hours as seen in **Table 1**.

(2)

(d) The sample used in this pilot study was an opportunity sample. Briefly explain how using a stratified sample when the final study is conducted might be an improvement to the design.

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(3)

(e) The researcher designed a questionnaire to collect data from the students about how satisfied they felt when they had completed the course.
Give an example of an appropriate question that the researcher might use to collect qualitative data on the questionnaire.

(1)

(f) Briefly explain **one** problem the researcher might have in analysing the qualitative data collected from the questionnaires.

(2)

(g) Outline **one** ethical issue that should have been taken into account when carrying out the questionnaire.

(1)

In order to analyse all the responses to the questionnaire, each response was given a score by the researcher. The maximum score on the questionnaire was 20, where a score of 0 meant dissatisfied and a score of 20 meant very satisfied.

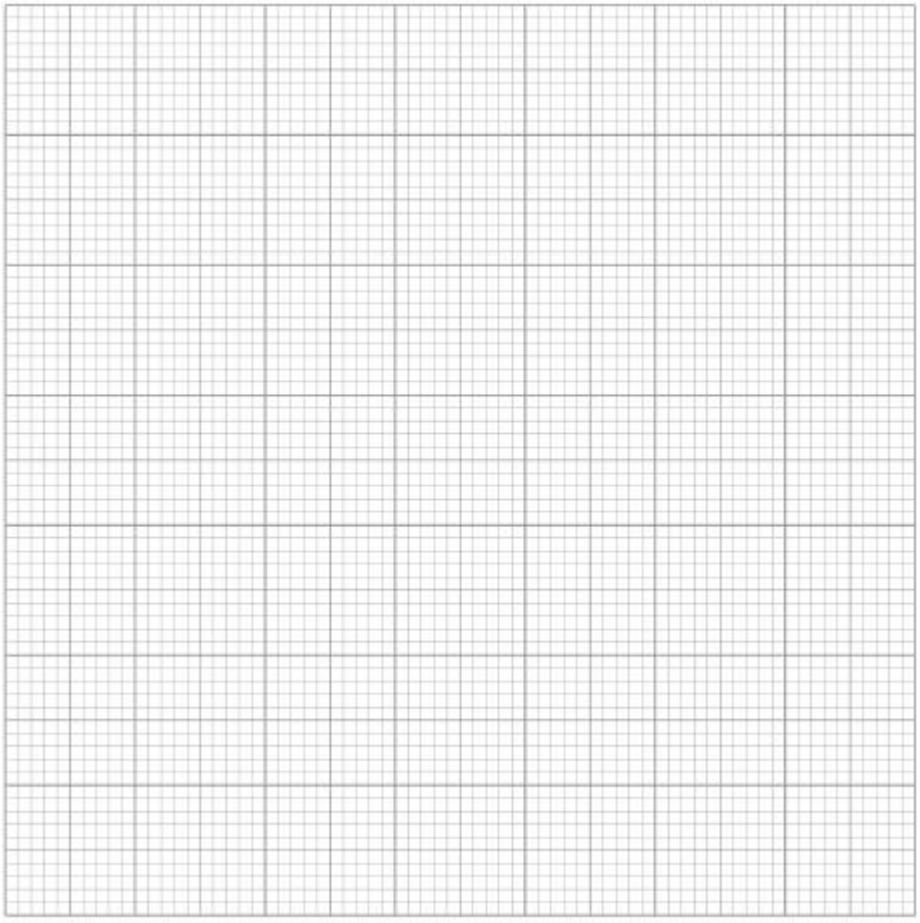
The following data was collected by the researcher.

Table 2: The numbers of hours each student (labelled A – K) studied the topic online and the satisfaction scores of each student.

	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**
Number of online hours	10	9	8	7	6	5	4	3	2	1	0
Satisfaction scores	5	6	8	7	10	12	13	15	17	19	19

(h) Using the data in **Table 2** and the graph paper provided below, draw an appropriate scattergram. Fully label your display.

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(4)

(i) What conclusion might the researcher draw, based on the results of the study?

_____

_____

_____

_____

(2)

(j) The researcher looked at the mode and median satisfaction scores of the students. Calculate these two descriptive statistics.

_____

_____

_____

_____

(2)

(k) Explain why the median would be more suitable than the mode to represent the average score for satisfaction for the students.

_____

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_____

_____

_____

(2)

(l) Another researcher looked at the data for the satisfaction scores and commented that they suggested a negative skew in the data.

Look at the following sets of descriptive statistics from a different study. Which of the sets (A or B or C) would indicate a negative skew in the distribution of the data?

Shade **one** box only.

A Mean: 7.3, median: 7.5, mode: 7.0 ⬭

B Mean: 7.3, median: 10.5, mode: 16 ⬭

C Mean: 7.3, median: 6.5, mode: 5 ⬭

(1)

(Total 24 marks)

Q5.

A researcher studying depression wanted to see whether or not there was a relationship between level of self-esteem and negative schema score. She constructed two questionnaires and asked ten people who had been diagnosed with depression to complete them.

One questionnaire measured the participant's level of self-esteem. A low score (out of 50) indicated low self-esteem.

The other questionnaire measured whether the participant showed evidence of negative schema. A low score (out of 50) indicated evidence of negative schema. The two sets of results for each participant are shown in the table below.

Table 1 - Self-esteem score and negative schema score for each patient

Participant	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Self-esteem score	8	9	9	11	13	17	18	18	20	22
Negative schema score	11	15	13	18	12	14	20	16	17	19

(a) Is negative schema score best described as measuring a cognitive, emotional or behavioural characteristic of depression? Shade **one** box only.

A Cognitive ⬭

B Emotional ⬭

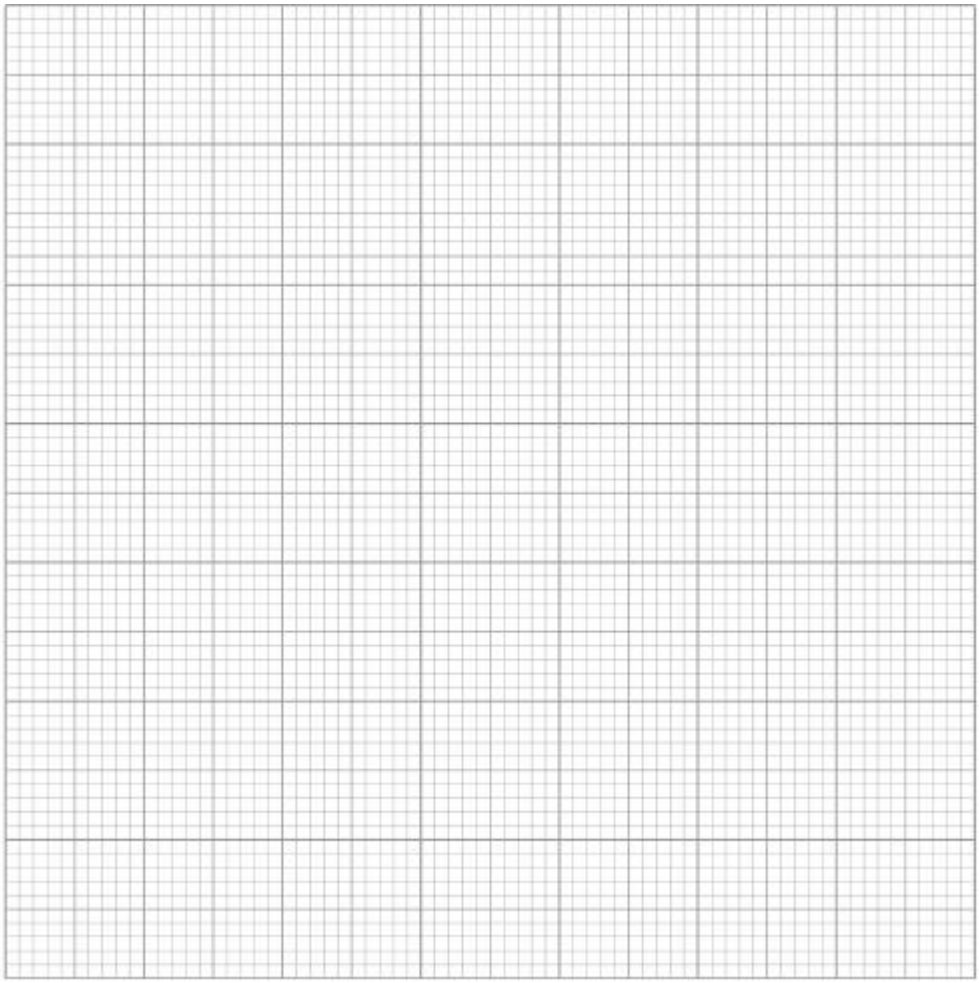
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C Behavioural ⬭

(1)

(b) Draw a suitable graphical display to represent the data in **Table 1**. Label your graph appropriately.

Title: _____



(4)

The researcher analysed the data in **Table 1** using a Spearman's rho statistical test.

(c) With reference to level of measurement, explain why Spearman's rho is an appropriate statistical test for this data.

_____

_____

_____

_____

(2)

(d) Estimate the correlation coefficient most likely to result from analysis of the data in **Table 1**. Shade **one** box only.

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The correlation coefficient would be approximately

+0.95 ⬭

+0.70 ⬭

+0.30 ⬭

+0.15 ⬭

(1)

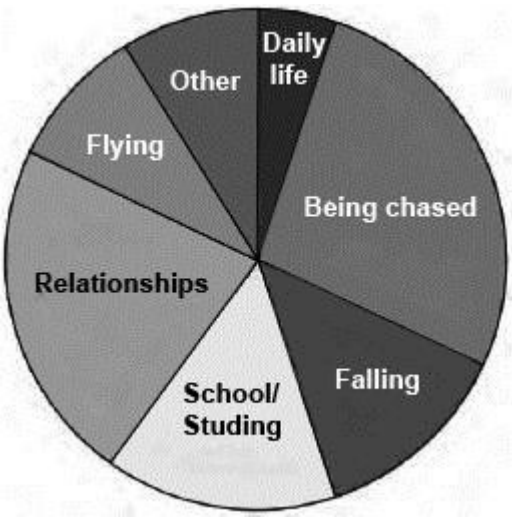
(Total 8 marks)

Q6.

A psychologist was reading an article about typical dream themes in adults.

The pie chart below shows the main dream themes identified in the article.

Main dream themes



(a) Using the pie chart above, estimate the percentage of dreams that were reported to be about being chased. Shade **one** box only.

A 4% ⬭

B 12% ⬭

C 27% ⬭

D 42% ⬭

(1)

The psychologist was interested in finding out whether dream themes differed between males and females, particularly in terms of social interaction. She decided to conduct a pilot study. Twenty undergraduate students (8 male and 12 female) volunteered for the study. For a six-week period the students were interviewed at 9 am each morning when they arrived at university. Interviewers, who did not know the purpose of the study, carried

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out and recorded the dream interviews.

(b) What is meant by a pilot study? Explain **one** possible reason why the psychologist decided to conduct a pilot study for this investigation.

(3)

(c) The interviews produced qualitative data.

What is meant by qualitative data? Give **one** strength of collecting qualitative data in this study.

(2)

(d) What are investigator effects? Suggest **one** way in which they could have been minimised during the dream interviews.

(3)

(e) Another researcher, who did not know the purpose of the study, carried out a content analysis of the interview data.

Explain how this content analysis could have been conducted.

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(4)

(f) The psychologist wanted to assess the reliability of the content analysis.

Explain how the reliability of the content analysis could be assessed.

(4)

When comparing the data for males and females, the psychologist found that there was a difference in the proportion of friendly and aggressive social interactions. This is shown in the table below.

Percentage of friendly and aggressive social interactions in dreams reported by males and females

	Males	**Females**
Friendly	40%	56%
Aggressive	60%	44%

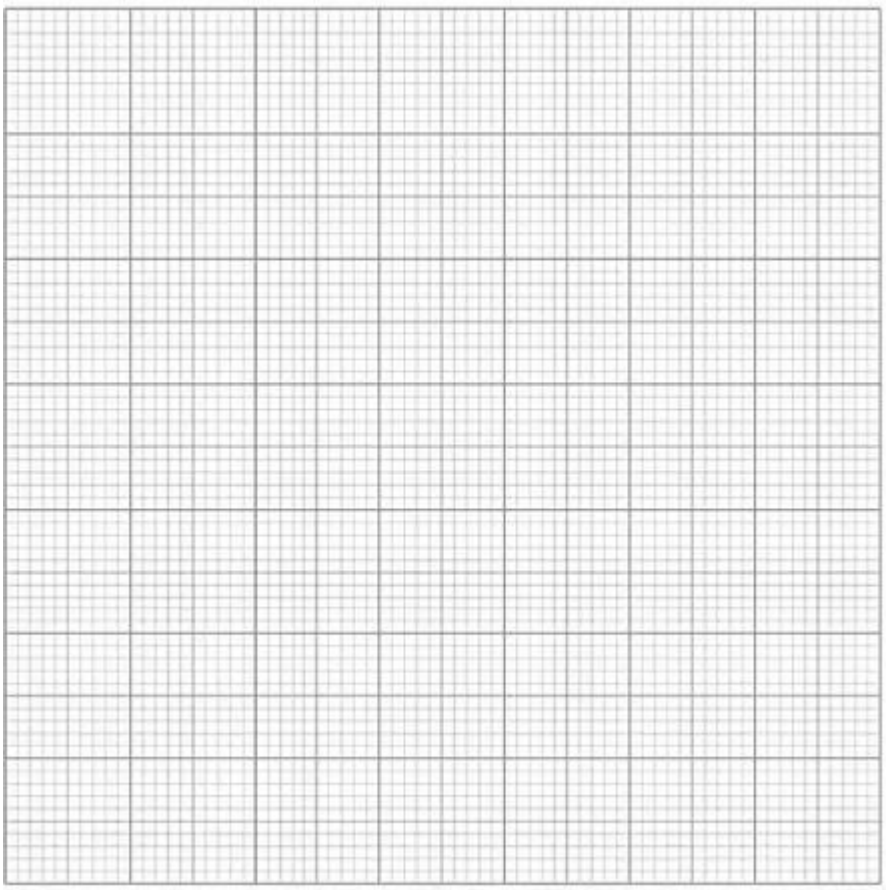
(g) A total of 375 dreams reported by males included social interaction. Use the data in the table above to calculate how many of these dreams reported by males were classified as aggressive. Show your workings.

(2)

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(h) Draw a suitable graphical display to represent the data in the table above. Label your graph appropriately.

Title:_____



(4)
(Total 23 marks)

Q7.

A psychologist decided to conduct an experiment to investigate the effect of watching horror films before going to bed.

A volunteer sample of 50 university students consented to take part in the experiment.

The 50 students were randomly split into two groups. **Group 1** watched a horror film before going to bed each night for the first week then a romantic comedy before going to bed each night for the second week. **Group 2** watched the romantic comedy in the first week and the horror film in the second week.

When the students woke up each morning, each student received a text message that asked if they had had a nightmare during the night. They could respond 'yes' or 'no'.

(a) Write a brief consent form that would have been suitable for use in this experiment.

The consent form should:

- include some detail of what participants might expect to happen
- refer to ethical issues
- be in an appropriate format / style.

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(6)

(b) The psychologist proposed a directional hypothesis.

Write a directional hypothesis for this experiment.

(3)

(c) The psychologist used a repeated measures design in this experiment.

Explain why it was important to use a repeated measures design in this case.

(2)

(d) The psychologist used counterbalancing in this experiment.

Explain why it was appropriate to use counterbalancing in this experiment.

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(2)

(e) Explain how the psychologist could have randomly split the sample of 50 students into the two groups.

(3)

The psychologist collated the responses of all the participants over the two-week period and calculated the mean and standard deviation for each condition.

Mean number of nightmares reported and the standard deviation for each condition

	Mean number of nightmares in 7 days	**Standard deviation**
Horror films	2.18	1.48
Romantic comedies	0.30	0.61

(f) What do the mean **and** standard deviation values in the table above suggest about the effect of the type of film watched on the occurrence of nightmares? Justify your answer.

(4)

(g) The psychologist found that the difference in the number of nightmares reported in the two conditions was significant at $p<0.05$.

Explain what is meant by 'significant at $p<0.05$' in the context of this experiment.

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(2)

(h) The psychologist was concerned about the validity of the experiment.

Suggest **one** possible modification to the design of the experiment and explain how this might improve validity.

(3)

(Total 25 marks)

Q8.

A psychologist investigated cognitive processing in two groups of people with schizophrenia. People in **Group A** showed positive symptoms of schizophrenia and people in **Group B** showed negative symptoms of schizophrenia. Each person completed a cognitive task and was given an overall score. The psychologist then calculated average scores for each group. The results are shown in the table below.

Measure of central tendency	Group A scores	Group B scores
Mean	22.4	26
Median	22.5	22.5
Mode	22	16

Using the data in the table above, explain how the distribution of scores in **Group A** differs from the distribution of scores in **Group B**.

(Total 4 marks)

Q9.

A psychologist investigated perception of foods in two groups of people. People in **Group A** were on a calorie-counting diet and people in **Group B** were on a low-fat diet. Each person completed a perception task and was given an overall score. The psychologist then calculated average scores for each group.The results are shown in the table below.

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Measure of central tendency	Group A scores	Group B scores
Mean	22.4	26
Median	22.5	22.5
Mode	22	16

Using the data in the table above, explain how the distribution of scores in **Group A** differs from the distribution of scores in **Group B**.

(Total 4 marks)

Q10.

A psychologist investigated workplace stress in two groups of people. People in **Group A** were employed by a company and people in **Group B** were self-employed. Each person completed a stress test and was given an overall score. The psychologist then calculated average scores for each group. The results are shown in the table below.

Measure of central tendency	Group A scores	Group B scores
Mean	22.4	26
Median	22.5	22.5
Mode	22	16

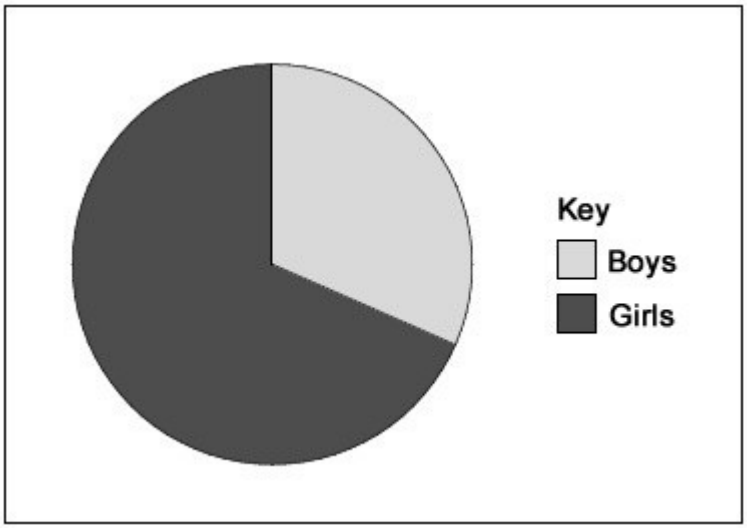
Using the data in the table above, explain how the distribution of scores in **Group A** differs from the distribution of scores in **Group B**.

(Total 4 marks)

Q11.

A researcher is investigating gender differences in classification of attachment. They conduct a study using Ainsworth's 'Strange Situation'. The results are shown in the figure below.

The proportions of boys and girls who are classified as securely attached



(a) Using the information in the figure, estimate the percentage of **boys** and **girls** that are securely attached.

Boys = _____

Girls = _____

(2)

(b) In a different study, 150 children were classified as securely attached. Of these, 40% were boys. How many of the 150 children were girls? Show your workings.

_____

_____

_____

_____

(2)

(c) The researcher collected quantitative data using the 'Strange Situation'. He then decided to collect qualitative data by conducting interviews with some of the parents of the infants.

Describe **two** differences between these types of data.

_____

_____

_____

_____

_____

_____

_____

_____

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(4)
(Total 8 marks)

Q12.

Students often claim that listening to music helps them to concentrate. A psychologist was not aware of any previous research in this area. She decided to investigate this claim.

Forty students from a nearby sixth form centre volunteered to take part in her study. They each answered the following question:

'Do you think that you concentrate on your work 'better', 'worse' or 'the same' if you listen to music while working?'

She obtained the results in **Table 1**.

Table 1: Responses to question - 'Do you think that you concentrate on your work 'better', 'worse' or 'the same' if you listen to music while working?'

Better	Worse	The same
22	8	10

(a) Should the hypothesis for this study be directional? Explain your answer.

(2)

(b) What percentage of the students reported that they would be able to concentrate 'better' if they listened to music while they worked? Show your workings.

(2)

(c) Explain why using stratified sampling might improve this study.

(2)

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(d) The data collected in this study is primary data.

Explain what is meant by ‘primary data’.

(2)

(e) In a follow-up study, the psychologist obtained a volunteer sample of 10 students aged 17 years from a different sixth form centre. Using a repeated measures design, participants were asked to complete two puzzle tasks as quickly as possible.

Task A was to find 10 differences in a ‘spot the difference’ puzzle while working in silence.

Task B was to find 10 differences in another ‘spot the difference’ puzzle while listening to music through headphones.

The tasks were counterbalanced and the time taken to complete each task was recorded for each student.

Table 2: Times taken (in seconds) to complete Task A (silence) and Task B (music)

Participant	Task A (silence)	Task B (music)
1	67	82
2	45	70
3	58	60
4	43	59
5	72	77
6	90	105
7	101	90
8	37	59
9	54	83
10	63	89

Explain **one** reason why the mean would be the most appropriate measure of central tendency to summarise the data in **Table 2**.

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(2)

(f) Calculate the mean values for **both** Task A **and** Task B. Show your workings.

Task A

Task B

(4)

(g) The psychologist used counterbalancing in the follow-up study.

Discuss the purpose of counterbalancing.

(3)

(h) Identify **one** possible extraneous variable that the psychologist should have controlled in this follow-up study. Explain how this variable might have affected the results of the study if it was not controlled.

(3)

(i) Explain how the follow-up study could be said to be an improvement on the original study.

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(4)

(Total 24 marks)

Q13.

A researcher wants to investigate the effectiveness of physiotherapy in the recovery of stroke patients with brain damage. Carers of stroke patients will be sent questionnaires to produce quantitative data.

(a) Explain **one** disadvantage of obtaining quantitative data in this study.

(2)

(b) Write **one** question that could be used in the researcher's questionnaire to produce quantitative data and **one** question that could be used in the researcher's questionnaire to produce qualitative data.

Quantitative question: _____

Qualitative question: _____

(2)

(Total 4 marks)

Q14.

A psychologist wanted to test whether listening to music improves running performance.

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The psychologist conducted a study using 10 volunteers from a local gym. The psychologist used a repeated measures design. Half of the participants were assigned to condition A (without music) and half to condition B (with music).

All participants were asked to run 400 metres as fast as they could on a treadmill in the psychology department. All participants were given standardised instructions. All participants wore headphones in both conditions. The psychologist recorded their running times in seconds. The participants returned to the psychology department the following week and repeated the test in the other condition.

(a) Identify the type of experiment used in this study. Shade **one** box only.

A Laboratory ⬭

B Natural ⬭

C Quasi ⬭

D Research ⬭

(1)

(b) Identify the operationalised dependent variable in this study.

_____

_____

_____

_____

(2)

(c) The results of the study are given in **Table 1** below.

Table 1: Mean number of seconds taken to complete the 400m run and the standard deviation for both conditions

	Condition A (without music)	**Condition B** (with music)
Mean 400m time (s)	123	117
Standard deviation	9.97	14.5

Explain why a histogram would **not** be an appropriate way of displaying the means shown in **Table 1**.

_____

_____

_____

_____

(2)

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(d) Name a more appropriate graph to display the means shown in **Table 1**. Suggest appropriate X (horizontal) and Y (vertical) axis labels for your graph choice.

Name of graph: _____

_____

X axis label: _____

_____

Y axis label: _____

(3)

(e) What do the mean and standard deviation values in **Table 1** suggest about the participants' performances with and without music? Justify your answer.

_____

_____

_____

_____

_____

_____

_____

_____

(4)

(f) Calculate the percentage decrease in the mean time it took participants to run 400 metres when listening to music. Show your workings. Give your answer to three significant figures.

_____

_____

_____

_____

_____

_____

_____

_____

(4)

(g) The researcher used a directional hypothesis and analysed the data using a related t-test. The calculated value of t where degrees of freedom (df) = 9 was 1.4377. He decided to use the 5% level of significance.

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Table 2: Table of critical values of t

Level of significance for a one-tailed test	0.05	0.025
Level of significance for a two-tailed test	0.10	0.05
df = 1	6.314	12.706
2	2.920	4.303
3	2.353	3.182
4	2.132	2.776
5	2.015	2.571
6	1.943	2.447
7	1.895	2.365
8	1.860	2.306
9	1.833	2.262
10	1.812	2.228

Calculated value of t must be equal to or greater than the critical value in this table for significance to be shown.

Give **three** reasons why the researcher used a related t-test in this study and, using **Table 2**, explain whether or not the results are significant.

(5)

(h) What is meant by a Type II error? Explain why psychologists normally use the 5% level of significance in their research.

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(3)

(i) Identify **one** extraneous variable that could have affected the results of this study. Suggest why it would have been important to control this extraneous variable and how it could have been controlled in this study.

(3)

(j) The report was submitted for peer review and a number of recommendations were advised.

Describe the process and purposes of peer review.

(6)

(Total 33 marks)

Q15.

A psychologist is investigating causes of offending. She interviews offenders who are in prison for violent crime. She asks them to describe their family and early childhood, recording everything that they say. She also looks at information in the offenders' court and prison reports.

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(a) Referring to this investigation, explain the difference between primary and secondary data.

(4)

(b) Explain how the psychologist could continue her investigation by carrying out thematic analysis of the interview recordings.

(2)

(Total 6 marks)

Q16.

A psychologist is investigating causes of offending. She interviews offenders who are in prison for violent crime. She asks them to describe their family and early childhood, recording everything that they say. She also looks at information in the offenders' court and prison reports.

(a) Referring to this investigation, explain the difference between primary and secondary data.

(4)

(b) Explain how the psychologist could continue her investigation by carrying out thematic analysis of the interview recordings.

(2)

(Total 6 marks)

Q17.

A psychologist is investigating causes of addiction to gambling. She interviews people attending debt counselling for problem gamblers. She asks them to describe their family and early childhood, recording everything that they say. She also looks at information in the gamblers' debt counsellor reports.

(a) Referring to this investigation, explain the difference between primary and secondary data.

(4)

(b) Explain how the psychologist could continue her investigation by carrying out thematic analysis of the interview recordings.

(2)

(Total 6 marks)

Q18.

Ten A-level students took part in a study of attitudes to Milgram's research on obedience. They were asked about the value of Milgram's research and about ethical concerns with Milgram's research.

For each student, the researcher recorded two scores out of 10, a 'value of research' score and an 'ethical concern' score.

A high 'value of research' score means the student thinks Milgram's research was very valuable and a high 'ethical concern' score means that the student thinks that Milgram's research caused many ethical concerns.

The findings are shown in the table below.

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Student	Value of research score	Ethical concern score
1	6	10
2	8	9
3	9	7
4	5	7
5	2	3
6	6	8
7	7	7
8	9	8
9	6	10
10	6	7

(a) How many students have a 'value of research' score of <6?
Shade **one** box only.

A 2 students ⬭

B 3 students ⬭

C 4 students ⬭

D 5 students ⬭

(1)

(b) Give the mode for **both** sets of scores in the table above.

Mode for value of research _____

Mode for ethical concern _____

(2)

(c) The mode is one type of descriptive statistic.

Identify **two other** descriptive statistics that could be used to further analyse the data in the table above. In **each** case, explain how the descriptive statistics you have identified could be calculated.

_____

_____

_____

_____

_____

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(4)
(Total 7 marks)

Q19.

A researcher wanted to compare the effectiveness of two therapies for young offenders who had been identified as having anger management issues. Offenders, who were all sentenced to two years in a Young Offenders' Institution, were asked to volunteer to take part in an anger management programme. Fifty volunteers were randomly allocated to Group 1 (Therapy A) or Group 2 (Therapy B).

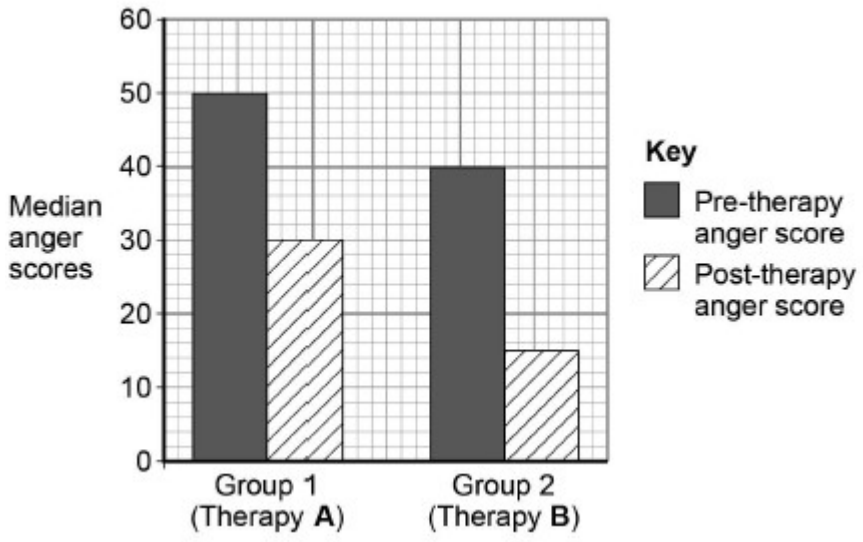
Each participant's anger was assessed before and after therapy. For the **pre-therapy anger score** they completed an Anger Scale questionnaire and their responses were scored. A high score indicated extreme anger and a low score indicated mild anger.

For the next eight weeks, participants attended weekly sessions for either Therapy A or Therapy B.

For the **post-therapy anger score**, at the end of the treatment period, participants completed the same Anger Scale questionnaire.

The data obtained are shown in the figure below.

Median anger scores before and after therapy for Group 1 (Therapy A) and Group 2 (Therapy B)



(a) The researcher used volunteers for this study. Outline **one** disadvantage of using volunteers to take part in this study.

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(2)

(b) Explain how the researcher could allocate the volunteers randomly to the conditions of the experiment.

(3)

(c) Write a suitable hypothesis for this study.

(3)

(d) What do the data in the figure above seem to suggest?

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(3)

(e) Explain how the study might be improved by using a matched pairs design.

(4)

(f) Outline **one** ethical issue that might have occurred in this study and explain how the researcher could have dealt with this issue.

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(4)

(g) Give **one** disadvantage of using median values as seen in the figure above to represent the anger scores of participants.

(1)

(h) Explain how demand characteristics might have occurred in this study.

(2)

(i) The researcher used a questionnaire to assess the anger scores of the offenders. Briefly discuss **one** strength of using questionnaires in research.

(Total 24 marks)

Q20.

Read the item and then answer the questions that follow.

Participants in an experiment were shown a film of a robbery. The participants were then divided into two groups. One group was interviewed using a standard interview technique and the other group was interviewed using the cognitive interview technique. All participants were then given an 'accuracy score' (out of 20) based on how closely their recall matched the events in the film (20 = completely accurate, 0 = not at all accurate).

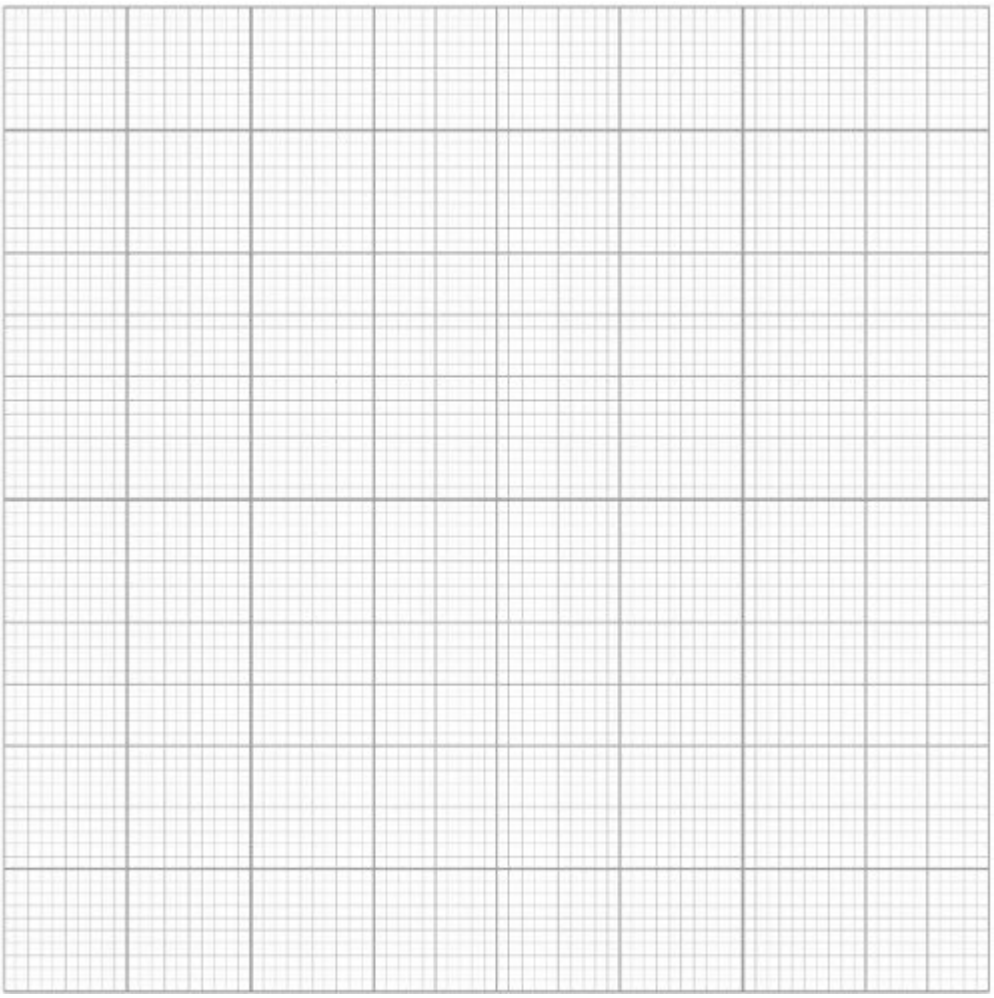
The results of the experiment are shown in the table below.

The median accuracy score for the standard interview and the cognitive interview

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	Standard interview	Cognitive interview
Median	10	15

(a) Sketch an appropriate graphical display to show the median accuracy scores in the table above.



(6)

(b) The experiment used an independent groups design.

Explain how this study could have been modified by using a matched pairs design.

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(4)

(Total 10 marks)

Q21.

Read the item and then answer the questions that follow.

A psychologist wanted to see if creativity is affected by the presence of other people. To test this he arranged for 30 people to participate in a study that involved generating ideas for raising funds for a local youth club. Participants were randomly allocated to one of two conditions.

Condition A: there were 15 participants in this condition. Each participant was placed separately in a room and was given 40 minutes to think of as many ideas as possible for raising funds for a local youth club. The participant was told to write down his or her ideas and these were collected in by the psychologist at the end of the 40 minutes.

Condition B: there were 15 participants in this condition. The participants were randomly allocated to 5 groups of equal size. Each group was given 40 minutes to think of as many ideas as possible for raising funds for a local youth club. Each group was told to write down their ideas and these were collected by the psychologist at the end of the 40 minutes.

The psychologist counted the number of ideas generated by the participants in both conditions and calculated the total number of ideas for each condition.

Total number of ideas generated in Condition A (when working alone) and in Condition B (when working in a group)

	Condition A Working alone	**Condition B Working in a group**
Total number of ideas generated	110	75

(a) Identify the experimental design used in this study **and** outline **one** advantage of this experimental design.

(3)

(b) Describe **one other** experimental design that researchers use in psychology.

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(2)

(c) Apart from using random allocation, suggest **one** way in which the psychologist might have improved this study by controlling for the effects of extraneous variables. Justify your answer.

(2)

(d) Write a suitable hypothesis for this study.

(3)

(e) From the information given in the description, calculate the number of participants in each group in Condition B.

(1)

Read the item and then answer the questions that follow.

> The psychologist noticed that the number of ideas generated by each of the individual participants in **Condition A** varied enormously whereas there was little variation in performance between the 5 groups in **Condition B.** He decided to calculate a measure of dispersion for each condition.

(f) Name a measure of dispersion the psychologist could use.

(1)

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(g) The psychologist uses the measure of dispersion you have named in your answer to **question (f)**. State how the result for each condition would differ.

(1)

(h) Explain how the psychologist could have used random allocation to assign the 15 participants in **Condition B** into the 5 groups.

(3)

(i) Using the information given in the table above, explain how the psychologist could further analyse the data using percentages.

(2)

(j) At the end of the study the psychologist debriefed each participant. Write a debriefing that the psychologist could read out to the participants in **Condition A.**

Extra space

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(6)

(Total 24 marks)

Q22.

Read the item and then answer the questions that follow.

A child psychologist carried out an overt observation of caregiver-infant interaction. She observed a baby boy interacting separately with each of his parents. Using a time sampling technique, she observed the baby with each parent for 10 minutes. Her findings are shown in the table below

Frequency of each behaviour displayed by the infant when interacting with his mother and when interacting with his father

	Gazing at parent	**Looking away from parent**	**Eyes closed**	**Total**
Mother	12	2	6	20
Father	6	10	4	20
Total	18	12	10	40

(a) Using the data in the table, explain the procedure used for the time sampling technique in this study.

(3)

(b) In what percentage of the total observations was the baby gazing at his mother? Show your calculations.

(2)

(c) Which **one** of the following types of data best describes the data collected in this study? Shade **one** box only.

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A Primary data ⬭

B Qualitative data ⬭

C Secondary data ⬭

D Continuous data ⬭

(1)

(Total 6 marks)

Q23.

A cognitive psychologist investigating how memory works gave participants the same word list to recall in one of two conditions. All the words were of equal difficulty.

Condition 1: Ten participants recalled the words in the same room in which they had learned the words.

Condition 2: Ten different participants recalled the words in a room that was not the same room as that in which they had learned the words.

The following results were obtained:

Mean values and standard deviations for Condition 1 and Condition 2 in a memory experiment.

	Condition 1	**Condition 2**
Mean	15.9	10.6
Standard deviation	3.78	1.04

(a) Why are the standard deviation values found in the study above useful descriptive statistics for the cognitive psychologist?

_____

_____

_____

_____

(2)

(b) Outline **one** problem of studying internal mental processes like memory ability by conducting experiments such as that described in part (a) above.

_____

_____

_____

_____

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(2)
(Total 4 marks)

Q24.

Read the text below and then answer the questions that follow.

Two researchers obtained a sample of ten people whose ages ranged from 20-years-old to 60-years-old.

Each participant was asked to take part in a discussion of social care issues. This included discussion about who should pay for social care for elderly people and how to deal with people struggling with mental health problems. A confederate of the researchers was given a script to follow in which a series of discussion points was written for the confederate to introduce.

Each participant then came into a room individually and the discussion with the confederate took place. The maximum time allowed for a discussion was 30 minutes.

The researchers observed the discussions between the confederate and participants and rated the active engagement of the participants in the discussion. The ratings were between 1, (not at all interested) and 20, (extremely interested.) The researchers believed that the rating provided a measurement of the participants' attitudes towards social care issues.

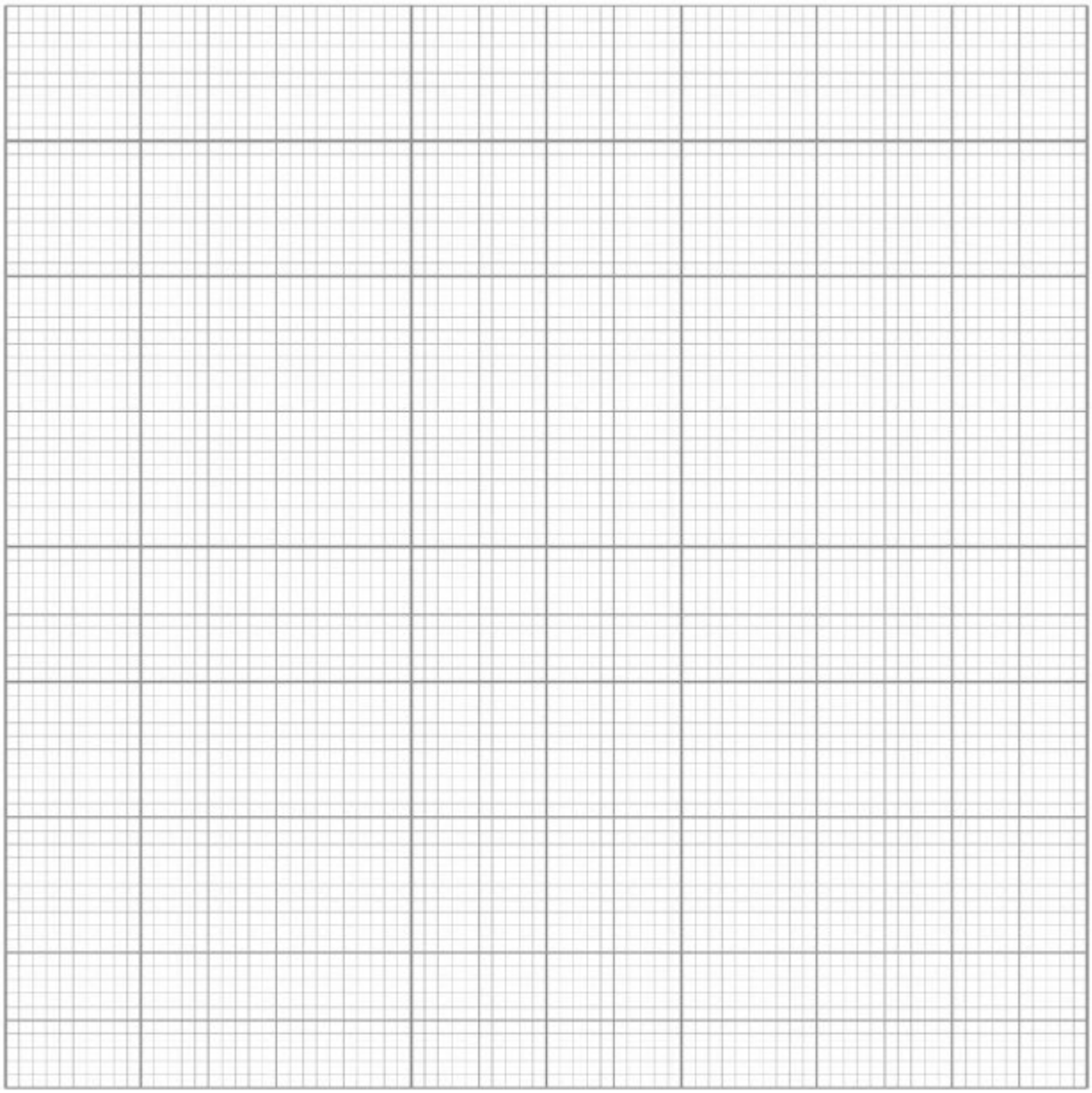
The following data were obtained in the study:

The relationship between age and attitude to social care.

Age of participant	Attitude to social care issues rating
21	5
23	3
34	8
36	12
40	10
47	13
52	17
53	15
58	18
60	20

(a) Use the graph paper below to sketch a display of the data given in the table above. You do not need to give your display a title.

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(3)

(b) What does the display you have drawn in your answer in part (a) suggest about the relationship between age and attitude to social care issues? Explain your answer.

_____

_____

_____

_____

(2)

(c) The researchers rated the active engagement of the participants in the discussion on social care. They used this rating as a measure of each participant's attitude to social care issues.

Briefly explain how investigator effects might have occurred in this study.

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(2)

(d) Outline how the researchers could have avoided investigator effects having an impact on the study.

(2)

The researchers thought it might be interesting to investigate further the attitudes of the participants in the study. They decided to interview each participant. The researchers devised a questionnaire in order to collect the data they required. The questionnaire included both open and closed questions.

(e) Briefly discuss the benefits for the researchers of using **both** closed **and** open questions on their questionnaire about attitudes to social care.

(4)

(f) Write **one** question that you think the researchers might have put on their questionnaire. Explain which type of question you have written and why you think this would be a suitable question for this study.

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(3)

The researchers have obtained both qualitative and quantitative data in the observations and interviews they have conducted.

(g) Identify the qualitative and quantitative data collected in this study. Explain your answer.

(4)

(h) Explain how the researchers should have addressed **two** ethical issues in the investigation.

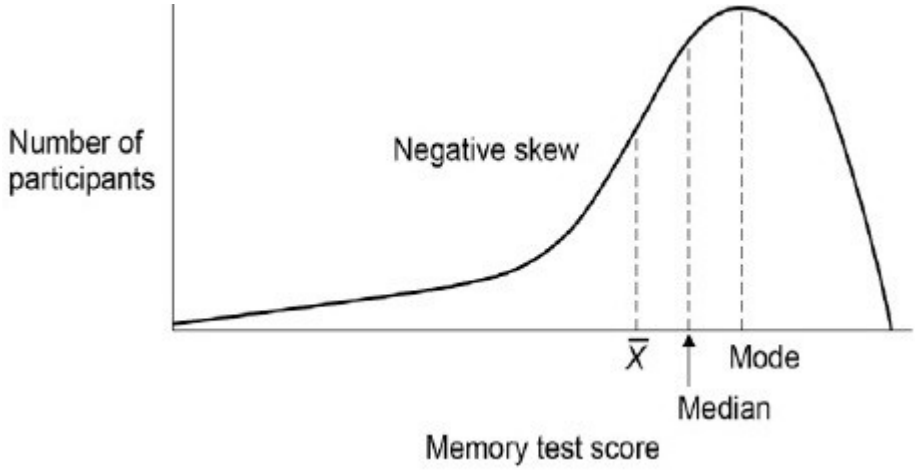
(4)

(Total 24 marks)

Q25.

A psychologist devised a memory test and tested 200 participants. The results are shown in the distribution graph below.

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The psychologist decides to modify the memory test so that it will produce a more normal distribution. Briefly explain how he might achieve this.

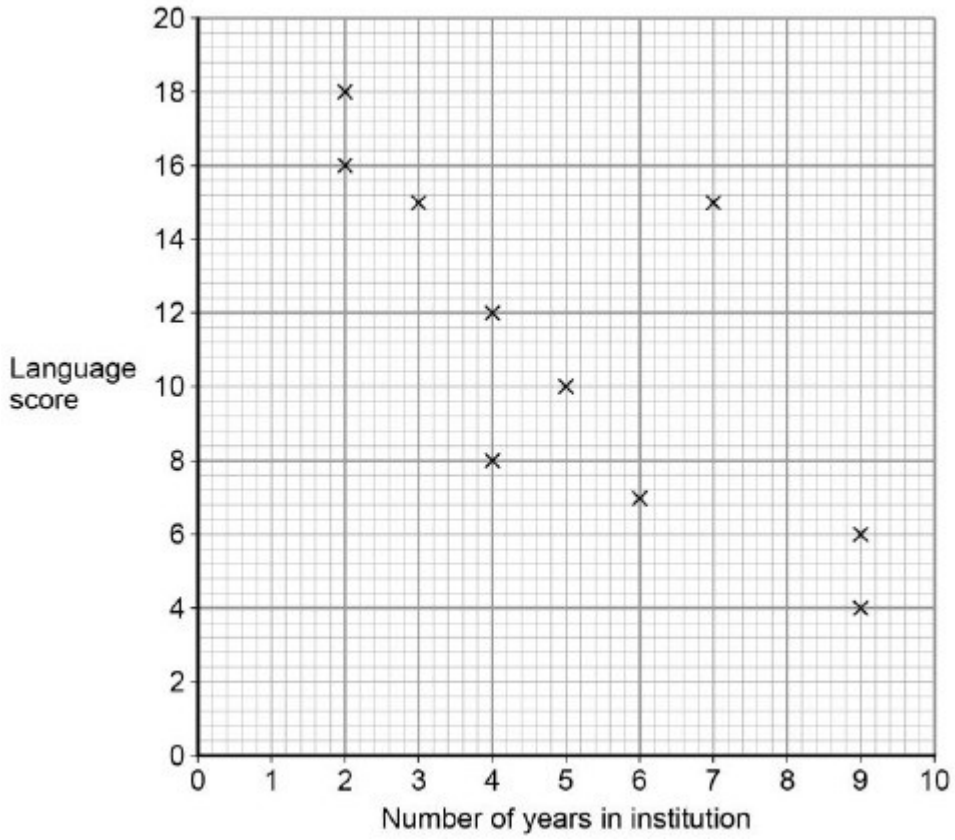
(Total 4 marks)

Q26.

A psychologist thinks that there may be a link between language ability and institutionalisation. She tests the language skills of 8-year-old institutionalised children. A high score on the test indicates good language ability and a low score on the test indicates poor language ability. She also records the number of years that each child has been institutionalised. The findings are shown in the figure below.

The relationship between time spent in institution and language score

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(a) Which research method is the psychologist using in this study? Explain your answer.

_____

_____

_____

_____

(2)

(b) Identify the type of graphical display in the figure. Shade **one** box only.

A Histogram ⬭

B Bar graph ⬭

C Line graph ⬭

D Scattergram ⬭

(1)

(c) How many children took part in the study?

_____

_____

(1)

(d) What does the pattern of data in the figure suggest about language ability and

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institutionalisation?

_____

_____

_____

_____

(2)

(e) Calculate the range for the language scores. Show your workings.

_____

_____

_____

_____

(2)

Q27.

Read the item and then answer the questions that follow.

Twenty primary school teachers were sent by their individual head teachers to attend a training course in classroom behaviour management run by educational psychologists at a local university. Before the training course, and again after training, the teachers were asked to say how confident they were in managing difficult classroom behaviour.

The researchers compared the before and after answers to see how many teachers rated their confidence as 'better', 'worse', or 'the same' as it had been at the start of the course.

The results are shown in the table below:

	Confidence Better	**Confidence Worse**	**Confidence Same**
Number of teachers	16	2	2

(a) Which of A, B, C or D best describes this study? Shade **one** box only.

A laboratory experiment ⬭

B pilot experiment ⬭

C natural experiment ⬭

D controlled experiment ⬭

(1)

(b) What fraction of the teachers thought that their confidence was better after the course? Show your workings.

_____

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(2)

(c) What might the researchers conclude about the training course on the basis of the data in the table? Explain your answer.

(2)

(d) What is the operationalised dependent variable in this study?

(2)

(e) Which experimental design is being used in this study and why would it be an appropriate design in this case?

(3)

(f) The psychologists conducting the training decided to use the Sign Test to see whether there was a significant difference in confidence in managing difficult classroom behaviour before and after the course.

Give the calculated value of S in this study and explain how you arrived at this figure.

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(3)

(g) Explain why statistical testing is used in psychological research.

(2)

(h) Following the training course, one of the researchers carried out an overt classroom observation of each teacher's primary school class. The researcher wanted to record the frequency of difficult classroom behaviours shown by the pupils during a normal lesson.

He identified six categories of disruptive behaviour and decided to record the frequency of each of the six behaviours during the first ten minutes and the last ten minutes of the lesson.

Suggest **two** behavioural categories that the researcher could record during his observation.

(2)

(i) Design a tally chart/record sheet the researcher could use to record his observations.

Show your tally chart/record in the box below.

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(3)

(j) Identify **one** problem that might have occurred during this observation and explain how the observation would be improved by addressing this problem.

(4)

(Total 24 marks)

Q28.

Read the item and then answer the questions that follow.

The results of the study are given in **the table** below.

Mean number of verbal errors and standard deviations for both conditions

	Condition A (believed audience of 5 listeners)	**Condition B (believed audience of 100 listeners)**
Mean	11.1	17.2
Standard	1.30	3.54

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deviation		

(a) What conclusions might the psychologist draw from the data in **the table**? Refer to the means **and** standard deviations in your answer.

(6)

(b) Read the item and then answer the question that follows.

> The psychologist had initially intended to use the range as a measure of dispersion in this study but found that one person in **Condition A** had made an exceptionally low number of verbal errors.

Explain how using the standard deviation rather than the range in this situation, would improve the study.

(3)

(c) Name an appropriate statistical test that could be used to analyse the number of verbal errors in **the table** above. Explain why the test you have chosen would be a suitable test in this case.

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(4)

(d) The psychologist found the results were significant at $p<0.05$. What is meant by 'the results were significant at $p<0.05$'?

(2)

(e) Briefly explain **one** method the psychologist could use to check the validity of the data she collected in this study.

(2)

(Total 17 marks)

Q29.

Read the item and then answer the questions that follow.

> A psychologist investigating the investment model of relationships, devised a self-report Investment Scale for use with a group of 100 female participants. The scale gave an investment score for each participant on a scale of 0–20, with 0 representing no investment in relationships and 20 representing extreme investment in relationships.
>
> The psychologist calculated measures of central tendency for the investment scores. He found that the mean investment score was 8.6, the median investment score was 9.5 and the mode investment score was 13.

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(a) Sketch a graph to show the most likely distribution curve for the investment scores in this study. Label the axes of your graph and mark on it the positions of the mean, median and mode

(3)

(b) What sort of distribution does your graph show?

(1)

(Total 4 marks)

Q30.

Read the item and then answer the questions that follow.

> In a study of androgyny, a group of 100 18-year-old students completed a self-report sex-role inventory. The inventory gave two sets of scores: a femininity score and a masculinity score. Each set of scores was on a scale of 0–20, with 0 representing no masculinity or no femininity and 20 representing extreme masculinity or extreme femininity.
>
> The researchers calculated measures of central tendency for the masculinity scores. They found that the mean masculinity score was 10.3, the median masculinity score was 9.5 and the mode masculinity score was 7.

(a) Sketch a graph to show the most likely distribution curve for the masculinity scores in this study. Label the axes of your graph and mark on it the positions of the mean, median and mode.

(3)

(b) What sort of distribution does your graph show?

(1)

(Total 4 marks)

Q31.

Read the item and then answer the questions that follow.

> A psychologist investigating egocentrism interviewed 100 parents, each of whom had a four-year-old child. She asked each parent to rate his or her child's egocentrism on a scale of 0–10, with 0 representing no egocentrism and 10 representing extreme egocentrism.
>
> The psychologist calculated measures of central tendency for the egocentrism scores. They found that the mean egocentrism score was 4.8, the median egocentrism score was 5 and the mode egocentrism score was 6.

(a) Sketch a graph to show the most likely distribution curves for the egocentrism scores in this study. Label the axes of your graph and mark on it the positions of the mean, median and mode.

(3)

(b) What sort of distribution does your graph show?

(1)

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(Total 4 marks)

Q32.

Distinguish between a Type I error and a Type II error.

(Total 4 marks)

Q33.

Researchers studying male and female map reading ability calculated the following statistics

	Map reading scores	
	Males	Females
Mean	15.4	5.25
Sd	2.70	2.22

(a) What do the mean and standard deviation values suggest about the male and female performances in the investigation?

(4)

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(b) In a replication of the part of the study in which map reading skills were investigated, 20 men and 20 women completed the original map reading task and the researchers obtained the following data:

Male map reading scores	17, 20, 13, 12, 13, 11, 8, 17, 12, 15, 14, 18, 20, 17, 17, 15, 13, 10, 5, 9.
Female map reading scores	12, 8, 10, 11, 4, 2, 11, 18, 17, 12, 13, 10, 3, 15, 11, 9, 10, 11, 16, 10.

The mean map reading score for both groups together was 12.23.

What percentage of the male group scored above the mean score and what percentage of the female group scored above the mean score? Show your calculations.

(4)

(c) Using your answers to both **question (a)** and **question (b)**, comment on the performances of the male and the female participants in this study.

(2)

(Total 10 marks)

Q34.

A researcher investigated the effectiveness of typical and atypical psychotics in schizophrenia patients with either negative or positive symptoms.

Percentages of patients with either negative or positive symptoms, responding well to typical or atypical antipsychotics.

	Number of	Number of

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	patients responding well to atypical antipsychotics	patients responding well to typical antipsychotics
Patients with negative symptoms	30	16
Patients with positive symptoms	60	60

What does the data in the table seem to show about the effectiveness of typical and atypical antipsychotics in the treatment of schizophrenia?

(Total 4 marks)

Q35.

Read the item and then answer the questions that follow.

In a study of antisocial activity and social background, researchers interviewed 100 children aged 14 years. They then classified each child according to their level of antisocial activity. They concluded that 26 were 'very antisocial', 40 were 'mildly antisocial' and 34 were 'not antisocial'. The researchers found that the majority of the 'very antisocial' children attended Crayford secondary school, whereas most of the other two groups of children attended another local school.

(a) The study on the opposite page is an example of socially sensitive research.

Briefly explain how the researchers could have dealt with the issue of social sensitivity in this study.

(4)

(b) What level of measurement is being used in this study?

(1)

(c) Explain **one** limitation of the level of measurement you have identified in your answer to (b).

(2)

(Total 7 marks)

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Q1.

A psychologist was interested in the effects of violent computer games on aggression in young boys. Following appropriate ethical procedures she set up a study in which she identified ten boys who played violent computer games for at least two hours a day (Group A), and another group of ten boys who did not play violent computer games (Group B). The boys were systematically observed in their school playground on five separate occasions and the total number of aggressive behaviours they demonstrated was recorded. The data are given in the table below:

The effects of playing violent computer games on aggressive behaviour in boys

Group A	Number of aggressive acts	Group B	Number of aggressive acts
1	19	1	8
2	9	2	7
3	3	3	11
4	18	4	7
5	13	5	6
6	16	6	24
7	5	7	9
8	3	8	10
9	7	9	5
10	35	10	10
Median		**Median**	

Complete the table by calculating the median for the two groups. Why did the psychologist use the median as a measure of central tendency rather than the mean?

(Total 4 marks)

Q2.

Prison staff compared two methods of managing anger in offenders. One group of offenders took part in cognitive therapy. Another group of offenders took part in discussion therapy.

After one month following the training, levels of anger for each individual were rated by prison staff on a scale of 0 – 100. The results are given in the table below:

Ratings of anger in offenders given either systematic CBT anger management training or general advice

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Cognitive Group	Anger rating	Discussion group	Anger rating
1	37	1	44
2	45	2	22
3	23	3	74
4	17	4	36
5	41	5	66
6	32	6	63
7	27	7	44
8	26	8	81
9	38	9	56
10	52	10	45
Median		**Median**	

Complete the table by calculating the median for the two groups. Show your working. Why did the psychologist use the median as a measure of central tendency rather than the mean?

(Total 4 marks)

Q3.

A psychologist was interested in the role of sensation-seeking in the development of addictive behaviour. She tested ten participants addicted to smoking (Group A) and ten participants who had no addictive behaviours (Group B). Each participant was given a questionnaire that measured sensation-seeking. Scores on the questionnaire are given in the table below:

Sensation seeking scores for those with addictive behaviours and for those with no addictions

Group A (Addicted to smoking)	Score on sensation-seeking questionnaire	Group B (No addictive behaviours)	Score on sensation-seeking questionnaire
1	65	1	16
2	32	2	25
3	25	3	27
4	29	4	24
5	28	5	59

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6	30	6	26
7	18	7	33
8	30	8	21
9	35	9	18
10	28	10	23
Median		**Median**	

Complete the table by calculating the median and range for the two groups. Why did the psychologist use the median rather than the mode?

(Total 4 marks)

Q4.

Two researchers wanted to investigate the influence of early attachment on later relationships. They asked 20 teenagers aged 14-16 to write an essay on the importance of family and friends. Ten of the teenagers had been raised by their mother and father. The other ten had spent the first five years of their lives in care (and were then adopted).

The researchers used content analysis to analyse the teenagers' essays. The researchers devised a set of categories to do this, two of which were 'references to love' and 'references to fear of rejection'.

(a) Explain **one** way in which the researchers may have checked whether their categories were reliable.

(3)

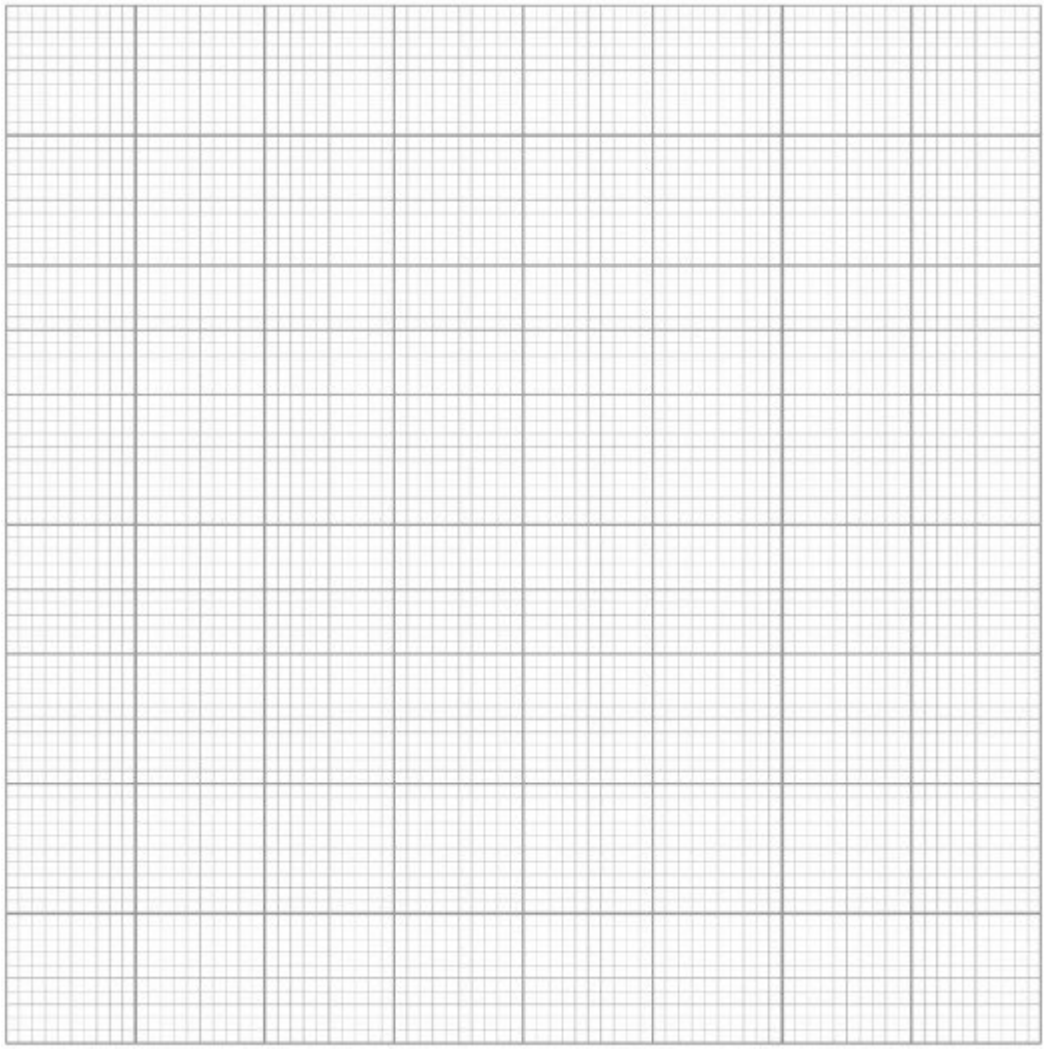
The results of the investigation for references to love and references to fear of rejection are shown in the table below:

The total number of references to love and references to fear of rejection in essays written by the care group and the non-care group

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	Total number of references to love	Total number of references to fear of rejection
Non-care group	40	5
Care group	16	15

(b) Draw a suitable graphical display to represent the data in the table.



(3)

(c) Express the total number of references to love in the essays written by the care group as a fraction of the total number of references to love in the essays overall. Show your calculations.

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(3)

(d) The researchers decided to interview some of the teenagers about their early life experiences.

Explain how the data collected from the interview might have improved upon the data collected from the content analysis.

(3)

(e) Explain Bowlby's monotropic theory. Refer to the data from the table in part (a) in your answer.

(6)

(Total 18 marks)

Q5.

Read the item and then answer the questions that follow.

Following previous research indicating the social benefits of green space in urban areas, two psychology students decided to observe

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social behaviour in public spaces. They focused on two neighbouring towns, Greensville where most public spaces were planted with flowers and vegetables, and Brownton where most public spaces were paved with concrete.

The students compared the instances of considerate behaviours in the two towns. Considerate behaviour categories included putting litter in the bin, having a dog on a lead and riding a bike with care.

The observations were carried out in four different areas of a similar size in each town on weekdays between the hours of 4.30pm and 6.00pm. The students worked together to ensure inter-observer reliability, recording each target behaviour whenever it occurred.

(a) Should the hypothesis for this research be directional or non-directional? Explain your answer.

(2)

(b) Before the observation could begin, the students needed to operationalise the behaviour category 'riding a bike with care'.

Explain what is meant by operationalisation and suggest **two** ways in which 'riding a bike with care' could have been operationalised.

(4)

(c) The students thought that having a dog on a lead was a useful measure of considerate behaviour because it had face validity. Explain what is meant by face validity in this context.

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(3)

(d) Identify and briefly outline **two** other types of validity in psychological research.

(4)

(e) Identify the behaviour sampling method used by the students. Shade **one** box only.

A Time sampling ⬭

B Pair sampling ⬭

C Event sampling ⬭

D Target sampling ⬭

(1)

(f) Explain how inter-observer reliability could be ensured by working as a pair.

(3)

(g) The data for considerate behaviours is shown in the **Table 1**.

Table 1

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Considerate behaviours			
	Litter in bin	Dog on lead	Riding bike with care
Greensville	23	23	10
Browntonn	10	17	9

The students noted that overall more considerate behaviours occurred in Greensville than in Brownton.

Calculate the ratio of considerate behaviours observed in Greensville to considerate behaviours observed in Brownton. Show your workings and present your answer in the simplest form.

(3)

(h) The students carried out a Chi-square test on their data.

Explain why the Chi-square test was an appropriate test to use in this case.

(3)

(i) In order to interpret the results of the Chi-square test the students first needed to work out the degrees of freedom. They used the following formula.

Degrees of freedom (df) = (r–1) x (c–1)
r = number of rows and c = number of columns

Calculate the degrees of freedom for the data in **Table 1**. Show your workings.

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(2)

(j) The calculated value of Chi-square was 6.20. Referring to the **Table 2** below, state whether or not the result of the Chi-square test is significant at the 0.05 level of significance. Justify your answer.

Table 2

df	*Levels of significance for a one-tailed test*			
	0.10	**0.05**	**0.025**	**0.01**
	Levels of significance for a two-tailed test			
	0.20	**0.20**	**0.05**	**0.02**
1	1.64	2.71	3.84	5.41
2	3.22	4.60	5.99	7.82
3	4.64	6.25	7.82	9.84
4	5.99	7.78	9.49	11.67

To be significant at the level shown the calculated value of Chi Square must be equal to or greater than the critical/table value

(3)

(k) In the discussion section of their report of the investigation the students wanted to further discuss their results in relation to levels of significance.

Write a short paragraph the students could use to do this.

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(4)

(l) As a follow-up to their observation the students decided to interview some of their peers about inconsiderate behaviours in their 6th Form Centre. The interviews were recorded.

Explain how the students could develop their interview findings by carrying out a content analysis and why content analysis would be appropriate in this case.

_____

_____

_____

_____

_____

_____

(3)

(m) Suggest **one** inconsiderate behaviour that the students might focus on in their content analysis.

_____

_____

(1)

(Total 36 marks)

Q6.

Design an experiment to investigate the effect of indoor plants on mood in office workers. For your measure of mood you should devise a measure that would give data suitable for testing at the ordinal level of measurement.

In your answer you should provide details of:

- Design – include reference to the experimental design, variables and controls
- Materials/Apparatus – describe any special materials required
- Data analysis that could be used – include reference to descriptive and inferential analysis.

Justify your choices.

You may use this space to plan your answer.

(Total 12 marks)

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Q7.

Read the item and then answer the questions that follow.

In a study of parasocial relationships a researcher studied male and female attachments to their favourite film star. An overall attachment score was calculated on the basis of answers to a questionnaire. A high score indicated a strong attachment and a low score indicated little attachment.

The scores are shown in the table below.

Males	Females
4	5
6	6
2	6
2	7
3	2
3	4
3	5
8	9
1	5
1	2
Median score 3	Median score 5

(a) Explain why the data in the table is primary data and not secondary data.

(2)

(b) Explain **one** strength of primary data.

(3)

(c) The researcher decided to extend the study by using an inferential test to see if there was a significant difference between the two sets of scores.

Suggest an appropriate inferential test which the researcher could use. Justify your choice.

(4)

(Total 9 marks)

Q8.

Read the item and then answer the questions that follow.

In a study of gender schema a researcher studied the way in which boys and girls understood gender. An overall understanding score was calculated on the basis of answers to a questionnaire. A high score indicated a very fixed understanding and a low score indicated a flexible understanding.

The scores are shown in the table below.

Girls	Boys
4	5
6	6
2	6
2	7
3	2

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3	4
3	5
8	9
1	5
1	2
Median score 3	Median score 5

(a) Explain why the data in the table is primary data and not secondary data.

(2)

(b) Explain **one** strength of primary data.

(3)

(c) The researcher decided to extend the study by using an inferential test to see if there was a significant difference between the two sets of scores.

Suggest an appropriate inferential test which the researcher could use. Justify your choice.

(4)

(Total 9 marks)

Q9.

Read the item and then answer the questions that follow.

In a study of social cognition a researcher studied perspective-taking in children aged 5 years and 9 years. An overall perspective-taking score was calculated on the basis of answers to a questionnaire. A high score indicated good perspective taking and a low score indicated poor perspective-taking.

The scores are shown in the table below.

5-year-olds	**9-year-olds**
4	5
6	6
2	6
2	7
3	2
3	4
3	5
8	9
1	5
1	2
Median score 3	Median score 5

(a) Explain why the data in the table is primary data and not secondary data.

(2)

(b) Explain **one** strength of primary data.

(3)

(c) The researcher decided to extend the study by using an inferential test to see if there was a significant difference between the two sets of scores.

Suggest an appropriate inferential test which the researcher could use. Justify your

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choice.

(4)

(Total 9 marks)

Q10.

A researcher investigated obedience. The table shows the percentages of people who obeyed a simple request from a confederate who was either smartly dressed or casually dressed.

Request	**Smartly dressed confederate**	**Casually dressed confederate**
Pick up some litter	80%	61%
Post a letter lying near a post box	61%	40%
Carry a heavy box up some stairs	30%	30%

What do these results suggest about obedience?

Extra space

(Total 4 marks)

Q11.

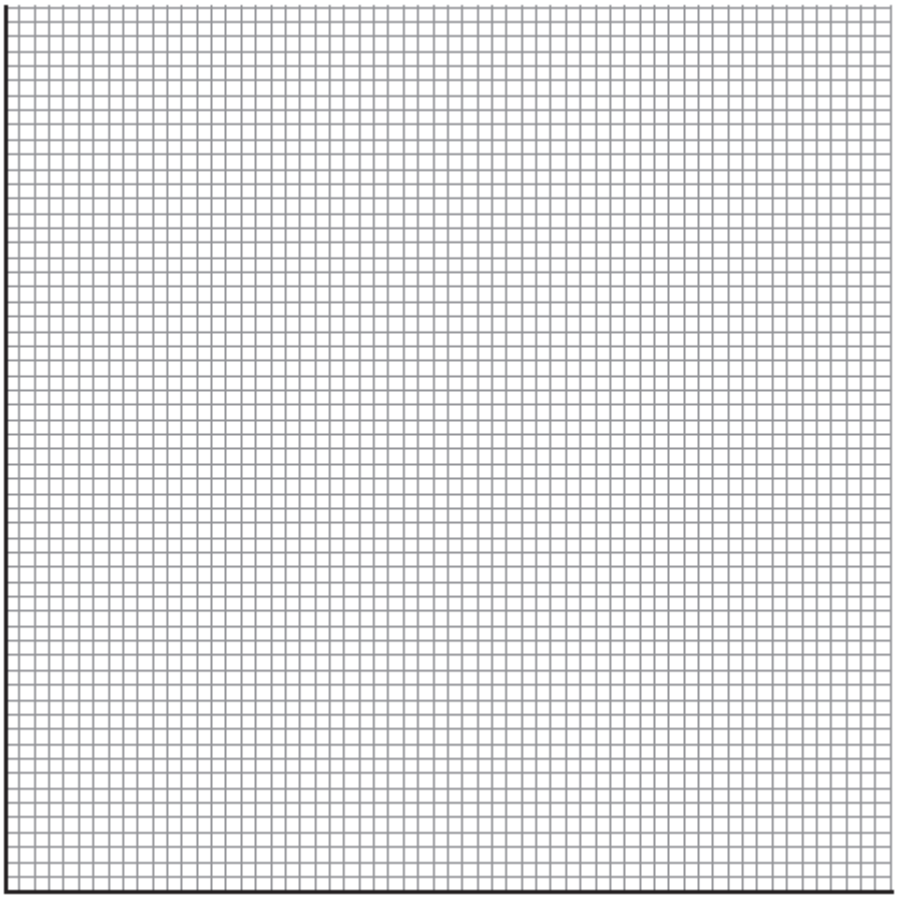
Two groups of patients took part in a trial to compare the effectiveness of two different drug therapies. One of the groups was given **Drug A** and the other group was given **Drug B**. All patients completed a rating scale at the start of a ten-week course of treatment and again at the end of the course. This scale measured the severity of symptoms.

The **Drug A** group had an average score of 9 before the therapy and an average score of 4 at the end of the course.

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The **Drug B** group had an average score of 7 before the therapy and an average score of 5 at the end of the course.

Sketch and label a bar chart to illustrate the data.



(Total 4 marks)

Q12.

In an observational study, 100 cars were fitted with video cameras to record the driver's behaviour. Two psychologists used content analysis to analyse the data from the films. They found that 75% of accidents involved a lack of attention by the driver. The most common distractions were using a hands-free phone or talking to a passenger. Other distractions included looking at the scenery, smoking, eating, personal grooming and trying to reach something within the car.

(a) What is content analysis?

(2)

(b) Explain how the psychologists might have carried out content analysis to analyse the film clips of driver behaviour.

(4)

(c) Explain how the two psychologists might have assessed the reliability of their content analysis.

The psychologists then designed an experiment to test the effects of using a hands-free phone on drivers' attention. They recruited a sample of 30 experienced police drivers and asked them to take part in two computer-simulated driving tests. Both tests involved watching a three-minute film of a road. Participants were instructed to

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click the mouse as quickly as possible, when a potential hazard (such as a car pulling out ahead) was spotted.

Each participant completed two computer-simulated driving tests:

- Test A, whilst chatting with one of the psychologists on a hands-free phone
- Test B, in silence, with no distractions.

The order in which they completed the computer tests was counterbalanced.

(3)

(d) Explain why the psychologists chose to use a repeated measures design in this experiment.

(3)

(e) Identify **one** possible extraneous variable in this experiment. Explain how this variable may have influenced the results of this experiment.

(3)

(f) Explain **one or more** ethical issues that the psychologists should have considered in this experiment.

(4)

(g) Write a set of standardised instructions that would be suitable to read out to participants, before they carry out Test A, chatting on a hands-free phone.

The computer simulator measured two aspects of driver behaviour:

- the number of hazards detected by each driver
- the time taken to respond to each hazard, in seconds.

The mean scores for each of these measures is shown in the table below.

Table to show the mean number of hazards detected and mean reaction times in seconds for Test A and Test B

Mean scores	**Test A: with hands-free phone**	**Test B: in silence**
Number of hazards detected	26.0	23.0
Reaction time in seconds	0.45	0.27

The psychologists then used an inferential statistical test to assess whether there was a difference in the two conditions.

(5)

(h) Identify an appropriate statistical test to analyse the difference in the number of hazards detected in the two conditions of this experiment. Explain why this test of difference would be appropriate.

They found no significant difference in the number of hazards detected ($p > 0.05$),

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but there was a significant difference in reaction times (p . 0.01).

(3)

(i) Explain why the psychologists did not think that they had made a Type 1 error in relation to the difference in reaction times.

(2)

(j) Replication is one feature of the scientific method. The psychologists decided to replicate this experiment using a larger sample of 250 inexperienced drivers.

Explain why replication of this study would be useful.

(3)

(Total 32 marks)

Q13.

A psychologist wanted to see whether or not there is a difference in the expectations that men and women have of their own numeracy skills. She obtained a sample of 15 men and 15 women from a factory. She conducted her study in two parts.

In the **first part** of the study, the psychologist said to each participant: “I want you to estimate how many marks you think you will get on a maths test that is suitable for 14-year-old children. If the test has a maximum score of 50, what mark do you think you will get?”

The psychologist recorded the estimate given by each participant and calculated the median estimates for the men and for the women.

The results of the study are given in **Table 1**.

Table 1: Median estimated maths test scores for men and women

	Median estimated maths test score
Men	31
Women	19

(a) Explain how a median score is calculated.

_____

_____

(1)

(b) Identify the dependent variable in this study.

_____

(1)

(c) Write a suitable hypothesis for this study.

_____

_____

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(2)

(d) Identify and explain the experimental design used in this study.

(2)

(e) Explain how the psychologist could have obtained a random sample of 15 men and a random sample of 15 women for this study.

(3)

(f) What conclusion could the psychologist draw from the median estimated scores in **Table 1**? Justify your answer.

(2)

In the **second part** of the study, each participant took a 30-minute maths test suitable for 14-year-old children. The test took place under examination conditions. The psychologist marked the test. The maximum mark was 50.

The results of the maths test are given in **Table 2**.

Table 2: Median maths test scores for men and women

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	Median maths test score
Men	25
Women	25

(g) Taking the results from **both** parts of the study (Table 1 and Table 2), what can the psychologist now conclude?

(3)

(h) After both parts of the study had been completed, the psychologist needed to debrief the participants.

Write a debrief that the psychologist could read out to the participants.

(4)

(i) This psychologist did not conduct a pilot study. Explain **one** reason why psychologists sometimes conduct pilot studies.

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(2)

(Total 20 marks)

Q14.

(a) One technique used in cognitive interviews is 'report everything'. When using this technique, the police officer in this investigation read the following instructions to the participants:

"Please tell me everything you can remember about what you saw in the film. Do not leave anything out, even the small details you think may be unimportant."

Identify **one other** technique which could have been used by the police officer in this cognitive interview. Write down the instructions that he could have read out to the participants.

Technique _____

Instructions to participants _____

(3)

(b) The psychologist also recorded the number of correct items recalled and the number of incorrect items recalled in each type of interview. The following results were obtained:

	Cognitive Interview	**Standard Interview**
Mean number of correct items recalled	45	32
Mean number of incorrect items recalled	8	8

From these results, what might the psychologist conclude about the effectiveness of cognitive interviews?

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_____

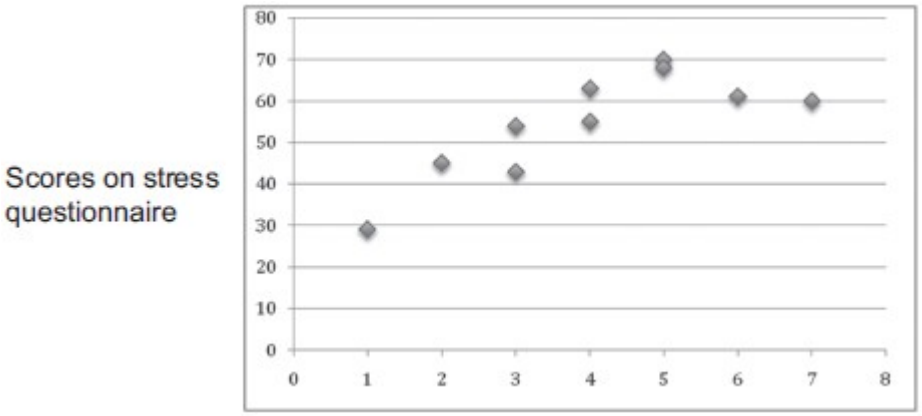
(2)

(Total 5 marks)

Q15.

Research has shown that there is a relationship between stress and illness.
The figure below shows the number of days off work through illness in a year and scores on a stress questionnaire, where a high score indicates more stress.

Relationship between days off work in a year through illness and stress scores



What does the figure above tell you about the relationship between stress and illness?

_____

_____

_____

_____

Extra space _____

_____

(Total 2 marks)

Q16.

Some studies have suggested that there may be a relationship between intelligence and happiness. To investigate this claim, a psychologist used a standardised test to measure intelligence in a sample of 30 children aged 11 years, who were chosen from a local secondary school. He also asked the children to complete a self-report questionnaire designed to measure happiness. The score from the intelligence test was correlated with the score from the happiness questionnaire. The psychologist used a Spearman's rho test to analyse the data. He found that the correlation between intelligence and happiness at age 11 was +0.42.

(a) Write an operationalised non-directional hypothesis for this study.

(2)

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(b) Identify an alternative method which could have been used to collect data about happiness in this study. Explain why this method might be better than using a questionnaire.

(4)

(c) A Spearman's rho test was used to analyse the data. Give **two** reasons why this test was used.

(2)

Extract from table of critical values from Spearman's rho(r_s) test

N (number of participants)	**Level of significance for a two-tailed test**	
	0.10	**0.05**
	Level of significance for a one-tailed test	
	0.05	**0.025**
29	0.312	0.368
30	0.306	0.362
31	0.301	0.356

Calculated r_s must equal or exceed the table (critical) value for significance at the level shown.

(d) The psychologist used a non-directional hypothesis. Using the table above, state whether or not the correlation between intelligence and happiness at age 11 (+0.42) was significant. Explain your answer.

(3)

(e) Five years later, the same young people were asked to complete the intelligence test and the happiness questionnaire for a second time. This time the correlation was –0.29.

With reference to **both** correlation scores, outline what these findings seem to show about the link between intelligence and happiness.

(4)

(Total 15 marks)

Q17.

The following results are percentages of participants who gave the maximum shock, in variations of Milgram's experiment into obedience to authority.

Condition	**% Participants obeying**
Experimenter and two obedient confederates are in the same room as the participant.	92.5%
Experimenter is in the same room as the participant.	65%
Experimenter is in a different room from the participant.	20.5%

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Experimenter and two disobedient confederates are in the same room as the participant.	10%

What do these results suggest about the power of the confederates in variations of Milgram's study?

Extra space

(Total 4 marks)

Q18.

A maths teacher wondered whether there was a relationship between mathematical ability and musical ability. She decided to test this out on the GCSE students in the school. From 210 students, she randomly selected 10 and gave each of them two tests. She used part of a GCSE exam paper to test their mathematical ability. The higher the mark, the better the mathematical ability. She could not find a musical ability test so she devised her own. She asked each student to sing a song of their choice. She then rated their performance on a scale of 1–10, where 1 is completely tuneless and 10 is in perfect tune.

(a) Suggest a suitable non-directional hypothesis for this study.

(3)

(b) Why might the measure of musical ability used by the teacher lack validity?

(3)

(c) Explain how the teacher could have checked the reliability of the mathematical ability test.

(3)

(d) Explain why the teacher chose to use a random sample in this study.

The results of the study are given in the table below.

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Mathematical ability test scores and musical ability ratings for 10 students

Student	Mathematical ability test score	Musical ability rating
1	10	10
2	2	9
3	9	3
4	6	6
5	3	9
6	10	2
7	2	1
8	1	8
9	8	4
10	4	7

(2)

(e) In your answer book, sketch a graph to show the data in the table above. Give the graph an appropriate title and label the axes.

(3)

(f) Discuss what the data in the table above and the graph that you have sketched seem to show about the relationship between mathematical ability and musical ability.

(3)

(g) The teacher noticed that most of the students who were rated highly on musical ability were left-handed. The teacher is aware that her previous definition of musical ability lacked validity.

Design a study to test whether there is a difference in the musical ability of left-handed students and right-handed students. You have access to a sixth form of 200 students.

You should:

- identify the design that you would use
- explain an appropriate sampling method and justify your choice
- describe the procedure that you would use, including details of how you would assess musical ability
- write a suitable debrief for these participants.

(10)

(h) In your answer book, draw a table to show how you would record your results.

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Identify an appropriate statistical test to analyse the data that you would collect. Justify your choice.

(3)

(Total 30 marks)

Q19.

When investigating the conditioning of behaviour, Behaviourists such as Pavlov and Skinner collected quantitative data.

Outline what is meant by *quantitative data*. Give an example of quantitative data collected by a psychologist who has studied conditioning.

(Total 2 marks)

Q20.

Give **two** reasons why Behaviourists do not collect qualitative data in their investigations.

(Total 2 marks)

Q21.

A study was carried out to test the effectiveness of a new anger management programme. The programme had been designed by a team of psychologists working in a young offenders' institution.

Fifteen male offenders aged 17– 21 years took part in the programme. An anger score for each offender was obtained before the start of the programme. This score was based on a questionnaire designed by the psychologists. The questionnaire had 10 items. The maximum score was 50; the higher the score, the greater the level of anger.

The month-long programme of anger management involved 8 two-hour sessions.

Throughout the programme, the offenders were told to keep a diary of situations that made them angry and to record their anger in these situations. After the programme had ended, they were told to continue to keep their diary.

Two weeks later, after the programme had ended, a second anger score was obtained for each offender. The same questionnaire was used.

The data obtained are shown in **Table 1** below.

Table 1: Median anger scores and the ranges before and after the programme

	Before	**After**
Median	**35**	**24**
Range	**15**	**17**

(a) Explain why measures of dispersion are often used in addition to measures of central tendency to summarise data. Refer to the results of this study in your answer.

(2)

(b) A Wilcoxon signed ranks test was used to test for a significant difference between

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the anger scores at the start of the programme and after the programme had ended.

The calculated value of *T* was found to be 22.

Table 2: Critical values of *T*

Level of significance for two-tailed test	0.1	0.05	0.02
Critical value of *T* (when *N* = 15)	30	25	19

T must be equal to or less than the critical value to be significant.

Using **Table 2** above, explain whether or not the result is significant.

(2)

(c) Explain why the psychologists decided to use a Wilcoxon signed ranks test to analyse the data.

(3)

(d) Explain **two** possible reasons for asking each offender to keep a diary.

(4)

(e) An independent researcher reviewed the design of the study and noted that there was no control group.

Explain how having a control group could have improved this study.

(3)

(f) The independent researcher was also concerned that the psychologists had not checked the reliability and validity of the questionnaire used to measure the level of anger.

Outline how the psychologists could check the reliability **and** the validity of the questionnaire.

(5)

(Total 19 marks)

Q22.

A researcher investigated the effect of age of starting day care on levels of aggression. Four-year-old children attending a day nursery were used. Each child was assessed by the researcher and given an aggression score. A high score indicated a high level of aggression.
A low score indicated a low level of aggression. The maximum score was 50.

Mean aggression scores for four-year-old children who had started day care before the age of two or after the age of two

	Started day care before the age of two	**Started day care after the age of two**
Mean score	25	23

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(a) Identify the operationalised independent variable **and** the operationalised dependent variable in this study.

Operationalised independent variable _____

_____

Operationalised dependent variable _____

_____

(4)

(b) What do the mean scores in the table above suggest about the effect of age at which children started day care on children's aggression?

_____

_____

_____

_____

(2)

(c) Name **one** measure of dispersion that the researcher could have used to describe the data.

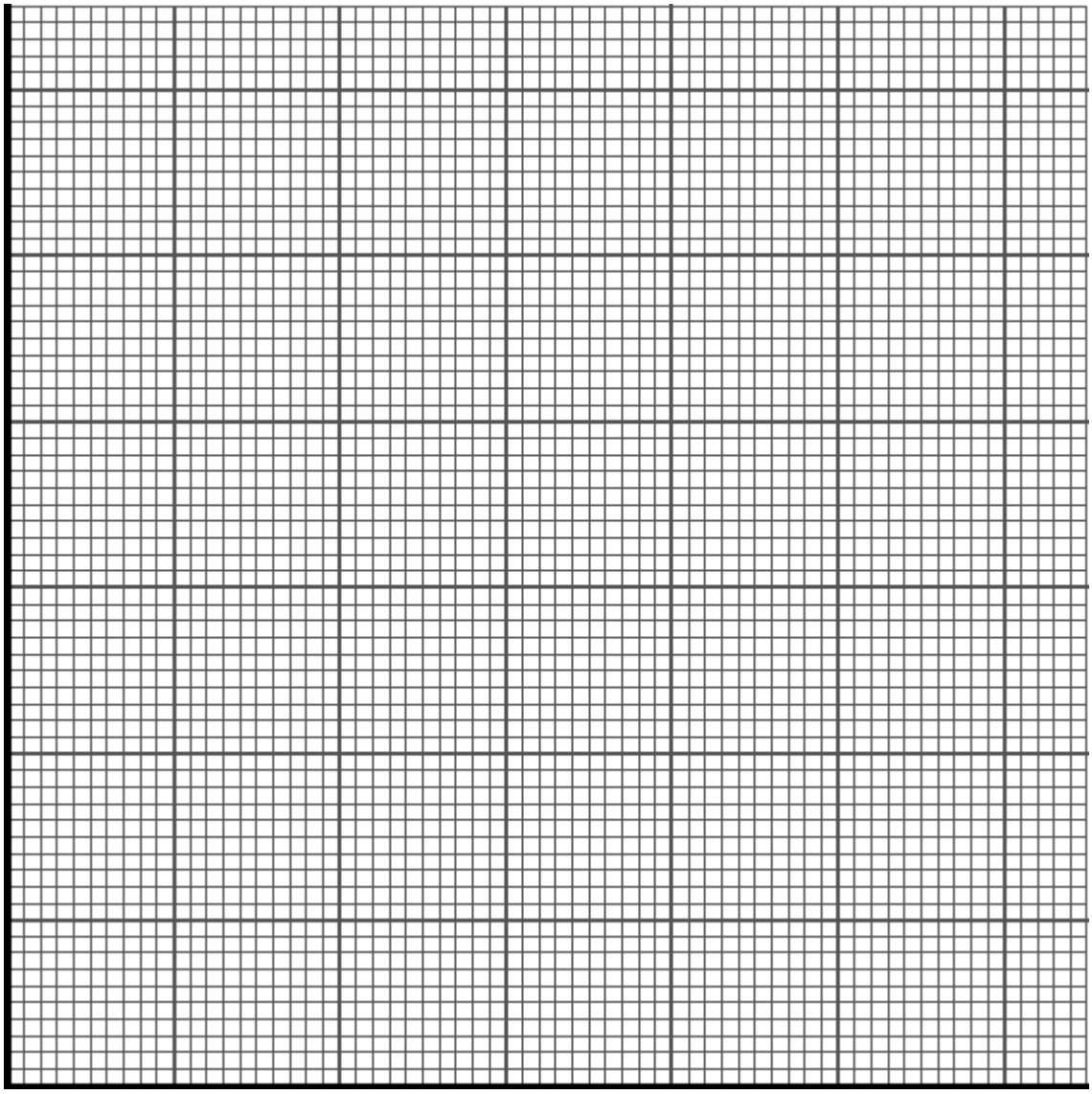
_____

_____

(1)

(d) Draw an appropriate bar chart to display the data presented in the table above. Correctly label your bar chart.

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(3)

(e) State an appropriate directional hypothesis for this study.

_____

_____

_____

_____

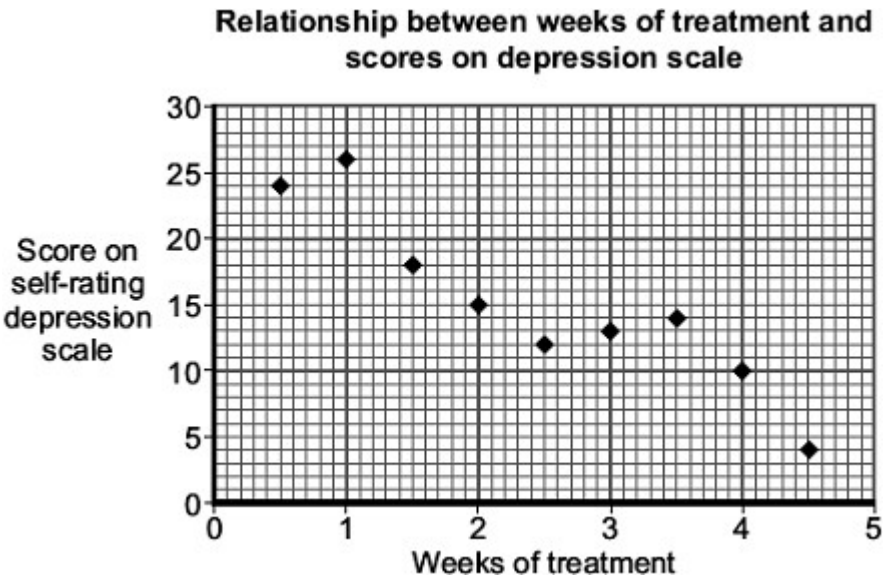
(2)

(Total 12 marks)

Q23.

The following scattergram shows the relationship between the number of weeks of treatment with ECT and the score on the Self-Rating Depression Scale (on this scale, a high score indicates depression).

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Outline what the scattergram seems to show.

_____

_____

_____

_____

_____

_____

_____

_____

(Total 4 marks)

Q24.

A psychologist wanted to investigate whether or not the presence of an audience had an effect on the performance of a task.

The task was to shoot netballs through a hoop. Each participant took 20 shots.

The experiment took place in a school sports hall.

The psychologist obtained the sample of participants from a local secondary school for girls. She drew the names of 40 participants at random from a list of girls who all played netball regularly. The first 20 participants drawn took part in the experimental condition and the next 20 participants took part in the control condition.

In the experimental condition, each participant took 20 shots. In this condition, 50 pupils from the school acted as an audience watching the performance.

In the control condition, the other 20 participants performed the same task, but this time without the audience watching.

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The psychologist observed each girl's performance and recorded the number of netballs successfully shot through the hoop.

(a) State an appropriate hypothesis for this study.

(2)

The results of the study are shown in the table below.

The mean number of netballs successfully shot through the hoop in the presence and absence of an audience.

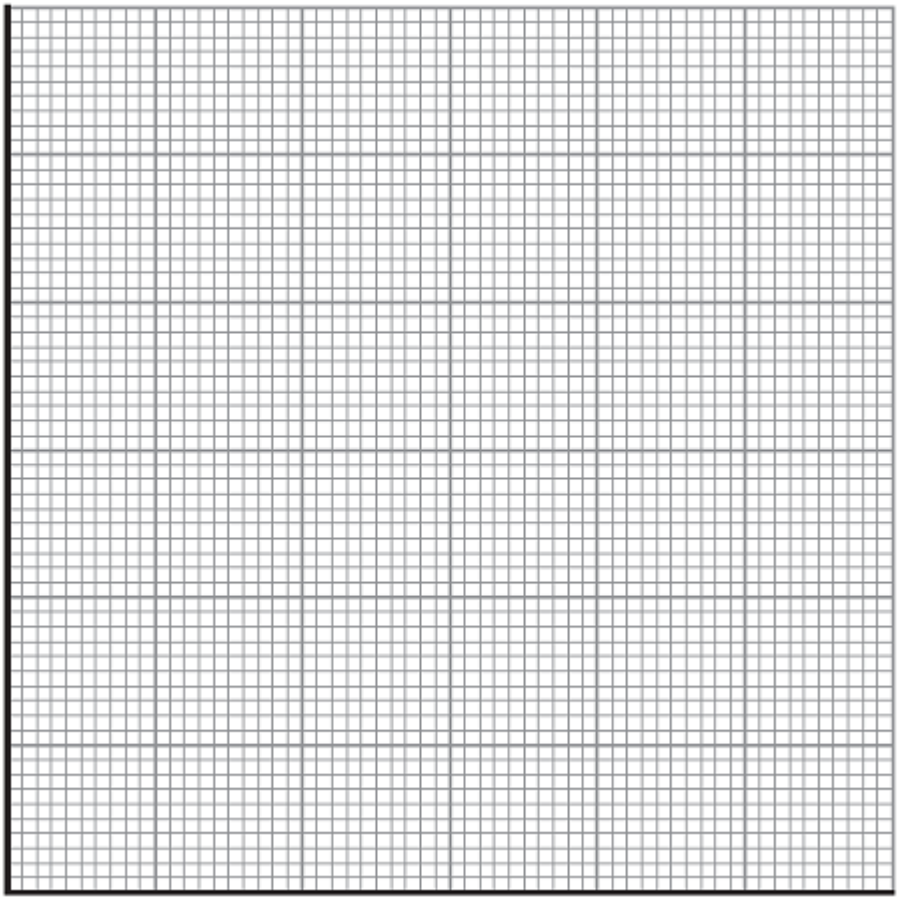
	Mean number of netballs successfully shot through the hoop
Presence of an audience	15
Absence of an audience	9

(b) What might the psychologist conclude from the data in the table above? Justify your answer.

(2)

(c) Sketch an appropriate graphical display of the data shown in **Table**.

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(3)

(d) The psychologist used random sampling to select the participants in this study.

Explain **one** strength of using a random sample.

(2)

(e) (i) The psychologist used an independent groups design in this study.

Briefly explain **one** limitation of using an independent groups design in this study.

(2)

(ii) Explain how the limitation that you have identified in your answer to **(e) (i)**

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might have been overcome.

(2)

(f) (i) What is meant by an *extraneous variable*?

(1)

(ii) Explain why it is important to control extraneous variables in experimental research.

(2)

(g) Write a short set of instructions that the psychologist could have read to the participants in the experimental condition.

Extra space

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(4)

(Total 20 marks)

Q25.

A psychologist carried out an experiment using an independent groups design. The psychologist wished to investigate the effectiveness of a strategy for memory improvement. In one condition, participants were taught a memory improvement strategy. In the other condition, participants were not taught this memory improvement strategy. All participants were asked to memorise 10 pictures of familiar objects. For example, the first was a doll, the second was an apple. All participants were then given 50 pictures each, and asked to select the original 10.

The psychologist did a pilot study before carrying out the experiment. The results of the experiment are shown in the table below.

(a) Write a directional hypothesis for this experiment.

(2)

(b) Explain what is meant by an independent groups design.

(1)

(c) Explain **one** strength and **one** limitation of using an independent groups design.

Strength

Limitation

(4)

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(d) Explain why the psychologist did a pilot study.

(3)

The mean number of pictures correctly identified and standard deviations for participants with the memory improvement strategy and without the memory improvement strategy

	With memory improvement strategy	Without memory improvement strategy
Mean	8	7
Standard Deviation	2.80	0.29

(e) What do the standard deviations in the table above tell us about the performance of the two groups?

(2)

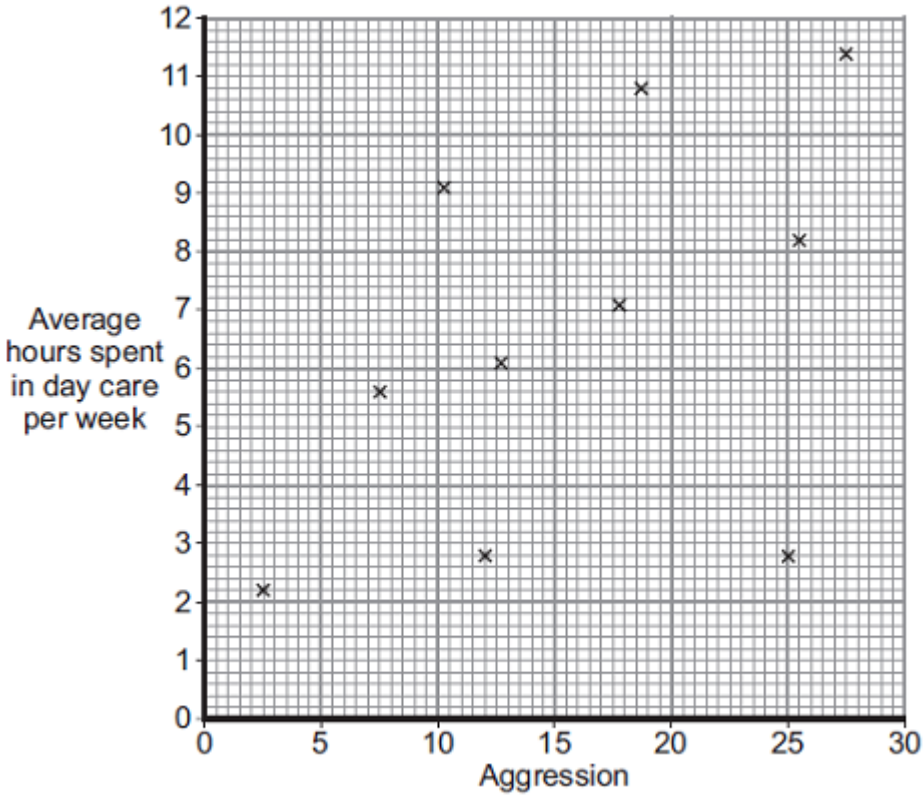
(Total 12 marks)

Q26.

Some research has suggested that there is a relationship between the time children spend in day care and their aggressive behaviour. Researchers selected a group of school children who had been in day care. They asked the children's mothers to estimate how many hours a week their children had spent in day care. They measured the same children's aggression.

Relationship between average hours spent in a day care and aggression

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(a) How many children are represented in this scattergram?

_____

(1)

(b) Suggest **one** way in which the children's aggression could be measured.

_____

_____

_____

_____

(2)

(c) In the media, it was claimed that the results showed spending time in day care caused the children to become aggressive.

Explain why this claim may be untrue.

_____

_____

_____

_____

_____

_____

(3)

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(Total 6 marks)

Q27.

Two different drug therapies were tested on a group of patients. All the patients suffered with the same anxiety disorder. Half the patients were given **Therapy A** and the other half were given **Therapy B**. Improvement was assessed on a scale from 0-25, where 0 = no improvement.

The table below shows the improvement made between the start and the end of the treatment.

Average and range of improvement scores

	Average	**Range**
Therapy A	6.5	2 – 19
Therapy B	6	4 – 9

Explain what these findings suggest about the different therapies?

Extra space _____

(Total 4 marks)

Q28.

Psychological research suggests an association between birth order and certain abilities. For example, first-born children are often logical in their thinking whereas later-born children tend to be more creative. A psychologist wonders whether this might mean that birth order is associated with different career choices. She decides to investigate and asks 50 artists and 65 lawyers whether they were the first-born child in the family or not.

(a) Write a non-directional hypothesis for this study.

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(2)

(b) Identify an appropriate sampling method for this study and explain how the psychologist might have obtained such a sample

The psychologist found the following results:

- 20 of the 50 artists were first-born children
- 35 of the 65 lawyers were first-born children.

She analysed her data using a statistical test and calculated a value of x^2 = 2.27. She then looked at the relevant table to see whether this value was statistically significant. An extract from the table is provided below.

Table: Critical values of x^2

Level of significance for a one-tailed test				
	0.10	0.05	0.025	0.01
Level of significance for a two-tailed test				
	0.20	0.10	0.05	0.02
df				
1	1.64	2.71	3.84	5.41

Calculated value of x^2 must be equal to or exceed the table (critical) values for significance at the level shown

(3)

(c) Imagine that you are writing the results section of the report on this investigation. Using information from the description of the study above and the relevant information from the statistical table, provide contents suitable for the results section.

You must provide all of the following:

- an appropriately labelled 2×2 contingency table a sketch of an appropriately labelled bar chart
- identification of the appropriate statistical test with justification for its use
- identification of an appropriate significance level
- a statement of the results of the statistical test in relation to the hypothesis.

(12)

(Total 17 marks)

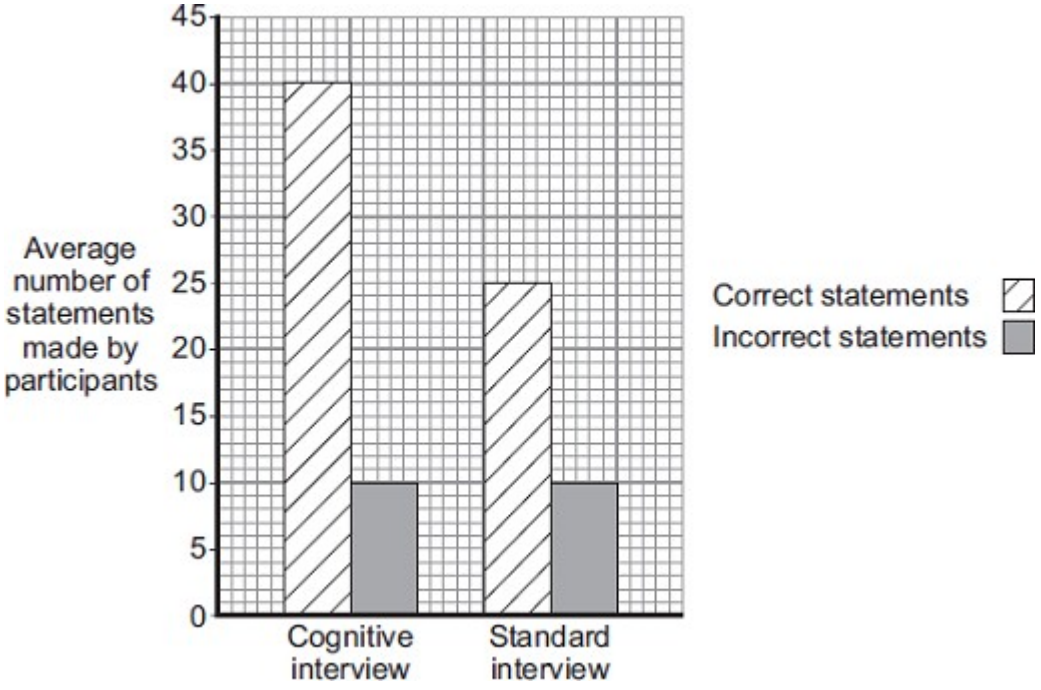
Q29.

Psychologists carried out a laboratory experiment to investigate the effectiveness of cognitive interviews. All participants watched the same film of a robbery. They were randomly allocated to **Group One** or **Group Two**. Participants were then asked to recall the robbery. The investigators used a cognitive interview to access recall of participants in **Group One** and a standard interview to access recall of participants in **Group Two**.

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The results of this experiment are summarised in the Figure below.

Average number of correct and incorrect statements made by participants under two different interview conditions



(a) What experimental design was used in this experiment?

(1)

(b) Explain **one** limitation of the design that was used in this experiment.

(2)

(c) Explain what the results suggest about the effectiveness of the cognitive interview.

(2)

(d) Participants in the standard interview were simply asked to describe what

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happened in the film.

Suggest **one** way in which participants in the cognitive interview condition could have been asked to recall what happened.

(2)

(e) What is meant by the term investigator effects? Explain possible investigator effects in this study.

Extra space

(4)

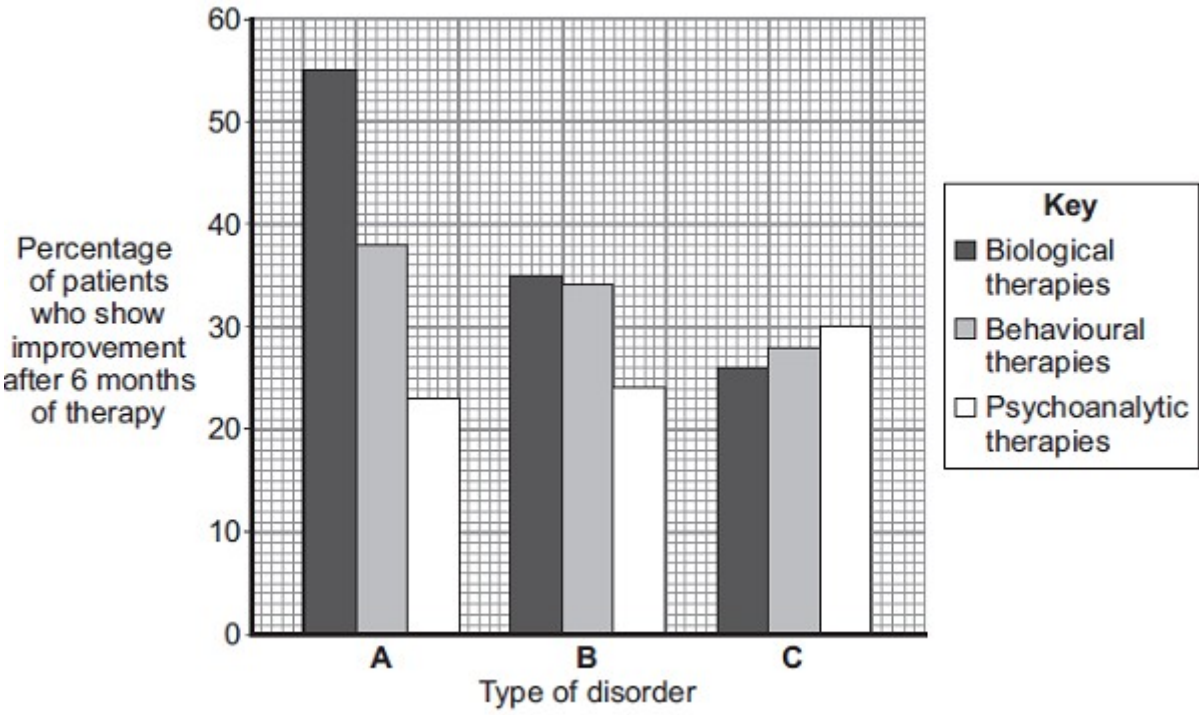
(Total 11 marks)

Q30.

A psychologist collected data on the effectiveness of three types of therapies for different types of disorders. The results are displayed in the bar chart below.

Percentage of patients who improved according to type of disorder and type of therapy

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What conclusions about the effectiveness of different therapies can you draw from the bar chart?

Extra space

(Total 4 marks)

Q31.

A researcher carried out an experiment to investigate how many numbers could be held in short-term memory. The participants were 15 children and 15 adults. Participants were asked to repeat lists of random numbers, in the correct order, as soon as they were read out by the researcher. For example, when the researcher said, “3, 4, 2, 8” the participant immediately repeated “3, 4, 2, 8”. When the researcher then said,“7, 5, 9, 6, 4” the participant immediately repeated “7, 5, 9, 6, 4”. One number was added to the list each time until participants were unable to recall the list correctly.Each participant’s maximum

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digit span was recorded.

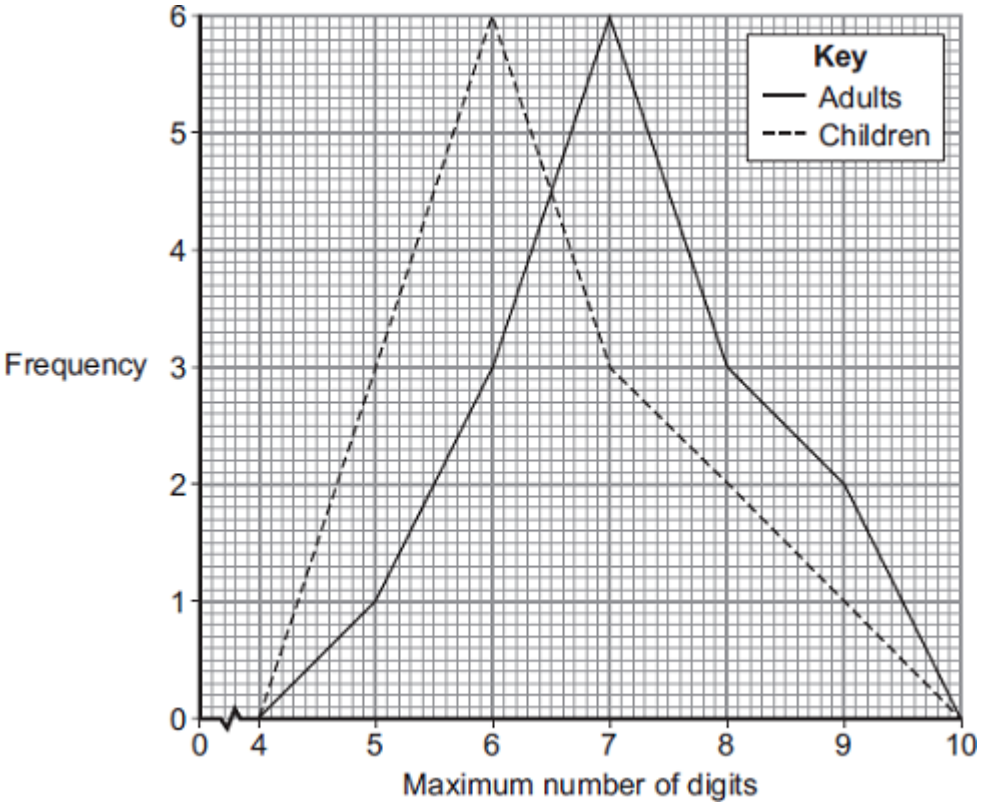
(a) Write an appropriate non-directional hypothesis for this experiment.

(2)

(b) Explain why the researcher used an independent groups design for this experiment.

(2)

(c) **Frequency distribution of the maximum number of digits correctly recalled by children and adults**



Write the mode for each group in the table below.

Age group	Mode

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Children	
Adults	

(2)

(d) What does the frequency distribution show about the results?

_____

_____

_____

_____

_____

_____

(3)

(e) Do the results of this experiment support the findings of other research into the capacity of short-term memory? Explain your answer.

_____

_____

_____

_____

(2)

(Total 11 marks)

Q32.

Read the text below and answer the questions that follow.

A psychologist is using the observational method to look at verbal aggression in a group of children with behavioural difficulties. Pairs of observers watch a single child in the class for a period of one hour and note the number of verbally aggressive acts within ten-minute time intervals. After seeing the first set of ratings, the psychologist becomes concerned about the quality of inter-rater reliability. The tally chart for the two observers is shown in the table below.

Table: Observation of one child – number of verbally aggressive acts in ten-minute time intervals

Time slots	0–10	11–20	21–30	31–40	41–50	51–60
Observer A	2	5	0	6	4	3
Observer B	4	3	2	1	6	5

(a) Use the data in the Table above to sketch a scattergram. Label the axes and give the scattergram a title.

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(4)

(b) Using the data in the Table above, explain why the psychologist is concerned about inter-rater reliability.

(4)

(c) Identify an appropriate statistical test to check the inter-rater reliability of these two observers. Explain why this is an appropriate test.

(3)

(d) If the psychologist does find low reliability, what could she do to improve inter-rater reliability before proceeding with the observational research?

(4)

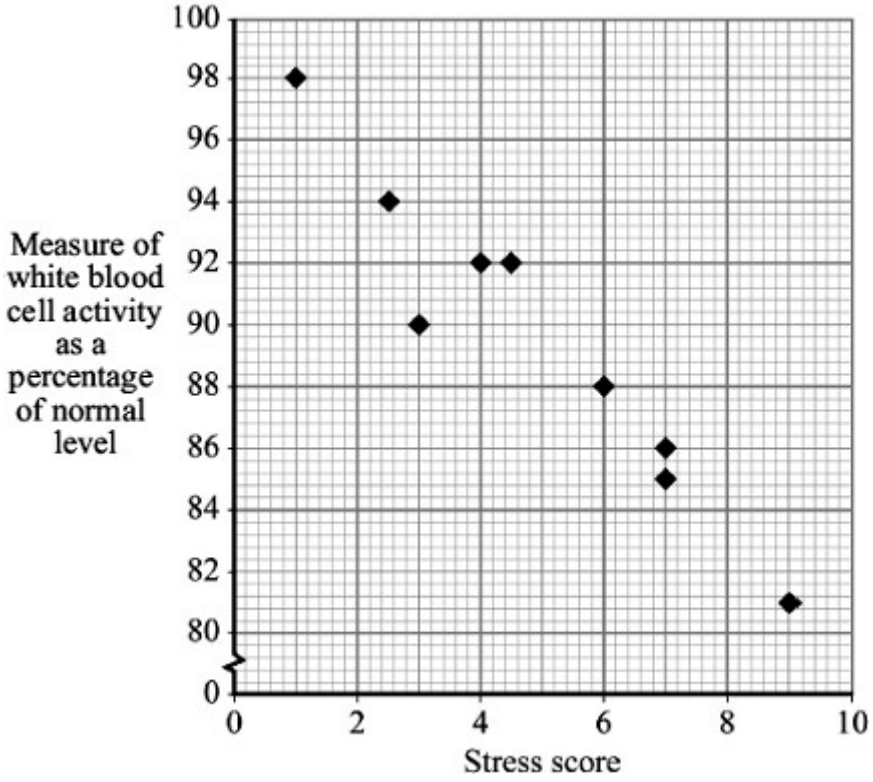
(Total 15 marks)

Q33.

One measure of the functioning of the immune system is the level of activity of white blood cells.

What does the graph below tell you about the relationship between stress and the level of activity of white blood cells?

Relationship between stress and the level of activity of white blood cells



_____

_____

_____

_____

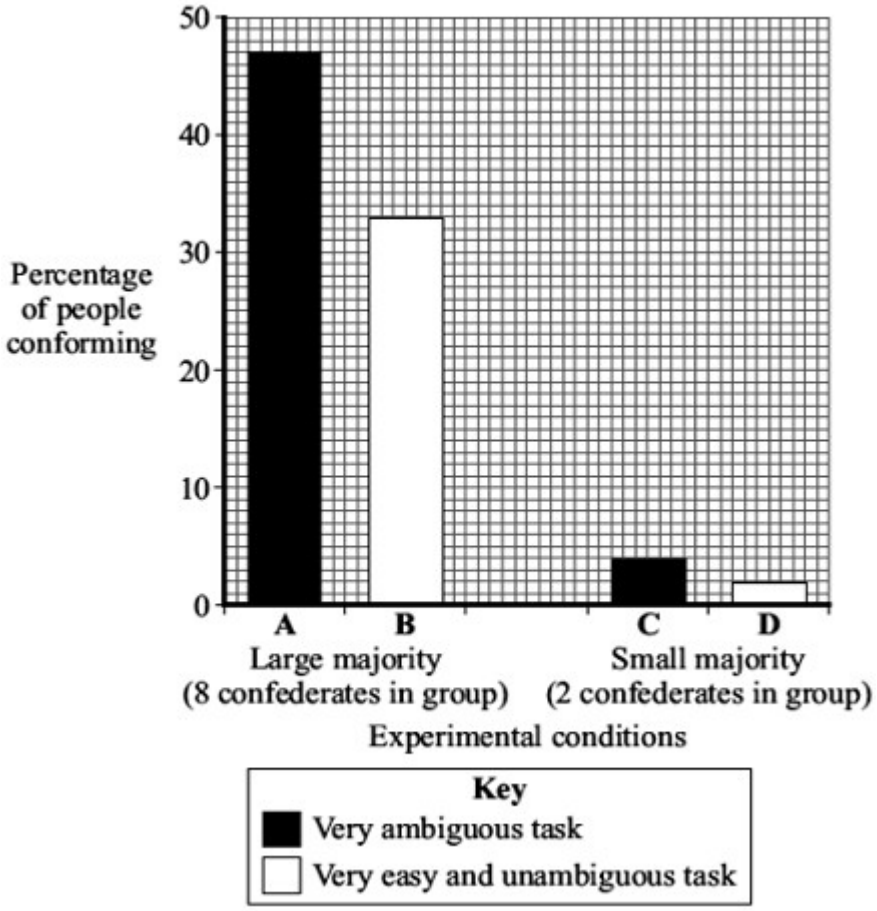
(Total 2 marks)

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Q34.

In an experiment into conformity, an experimenter varied both the number of confederates (stooges) and the ambiguity of the task. The bar chart below shows the findings.

Percentages of conformity for different tasks and size of majority



What does the bar chart show about conformity?

Extra space

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(Total 4 marks)

Q35.

A psychologist was interested in testing a new treatment for people with eating disorders. She put up adverts in several London clinics to recruit participants. Thirty people came forward and they were all given a structured interview by a trained therapist. The therapist then calculated a numerical score for each participant as a measure of their current functioning, where 50 indicates excellent, healthy functioning and zero indicates failure to function adequately. The psychologist then randomly allocated half the participants to a treatment group and half to a no-treatment group. After eight weeks, each participant was re-assessed using a structured interview conducted by the same trained therapist, and given a new numerical score. The trained therapist did not know which participants had been in either group.

For each participant, the psychologist calculated an improvement score by subtracting the score at the start of the study from the score after eight weeks. The greater the number, the better the improvement.

Median and range of improvement scores for the treatment group and for the no-treatment group

	Treatment group	**No–treatment group**
Median	10.9	2.7
Range	2.1	0.8

(a) With reference to the data in the table above, outline what the findings of this investigation seem to show about the effectiveness of the treatment.

(2)

(b) The psychologist used a statistical test to find out whether there was a significant difference in improvement between the 'treatment' and 'no-treatment' groups. She found a significant difference at the 5% level for a one-tailed test ($p \leq 0.05$).

Identify an appropriate statistical test for analysing the participants' scores. Explain why it would be a suitable test to use in this study.

(4)

(c) What is the likelihood of the psychologist having made a Type 1 error in this study? Explain your answer.

(2)

(d) The psychologist assumed that improvements in the treatment group were a direct result of the new type of treatment. Suggest **two** other reasons why people in the treatment group might have improved.

(4)

(e) The psychologist could have used self-report questionnaires to assess the participants instead of using interviews with the therapist. Explain **one** advantage and **one** disadvantage of using self-report questionnaires in this study rather than interviews.

(4)

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(f) The psychologist needed to obtain informed consent from her participants. Write a brief consent form which would be suitable for this study. You should include some details of what participants could expect to happen in the study and how they would be protected.

(5)

(g) What is meant by reliability? Explain how the reliability of the scores in this study could be checked.

(4)

(h) The psychologist noticed that female and male participants seemed to have responded rather differently to the treatment.

She decided to test the following hypothesis:

> Female patients with an eating disorder will show greater improvement in their symptoms after treatment with the new therapy than male patients.

She used a new set of participants and, this time, used self-report questionnaires instead of interviews with a therapist.

Imagine that you are the psychologist and are writing up the report of the study. Write an appropriate methods section which includes reasonable detail of design, participants, materials and procedure. Make sure that there is enough detail to allow another researcher to carry out this study in the future.

(10)

(Total 35 marks)

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Q1.

Some psychology students read about an experiment which suggested that organisation is a useful strategy for improving memory. The students carried out an experiment to investigate the effects of organisation on word recall. They made up a list of 50 items that could be bought in a supermarket. The participants were teachers at their school. One group of participants saw the words organised into categories such as fruit, vegetables, dairy products and cleaning materials. The other group saw the same words presented randomly.

The results are given in the **Table** below.

The number of words correctly recalled by participants who saw the organised list and participants who saw the random list

	Organised List	**Random List**
	20	15
	15	13
	18	19
	45	14
	24	20
	23	10
	28	21
	21	6
	25	22
	30	25
Measure of central tendency		
Measure of dispersion		

(a) Identify a suitable measure of central tendency that could be used with these data. Justify your answer.

_____

_____

_____

_____

(2)

(b) The psychology students decided to use a volunteer sample. Suggest **one** way in which this sample could be obtained.

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(2)

(c) Suggest **one** possible extraneous variable in this study.

(1)

(d) Suggest **one** way in which the students could control for this extraneous variable.

(2)

(Total 7 marks)

Q2.

A recent study recorded the amount of time that children spent in day care from birth to four years, and asked each child's mother to rate her child for aggression and disobedience. The study found that, as the time spent in day care went up, the mothers' rating of aggression and disobedience also went up.

(a) What kind of correlation is this research showing?

(1)

(b) Outline **one** strength and **one** weakness of using correlational research to investigate the effects of day care.

Strength

Weakness

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(4)
(Total 5 marks)

Q3.

A psychologist analysed the results of 'Strange Situation' studies from different countries. Some of the results are shown below.

Country (and number of studies)	**% of each type of attachment**		
	Secure	**Insecure-Avoidant**	**Insecure-Resistant**
Country One (2)	64	7	29
Country Two (18)	65	21	14
Country Three (4)	67	26	7

(a) Outline what the table above shows about cultural variations in attachment.

(3)

(b) Explain **one** criticism of investigating cultural variations in attachment using the 'Strange Situation.'

(3)
(Total 6 marks)

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