



# Psychology



Mark like an Examiner for A Level  
Component 2 Sample Answers

Question 1

**Define the term 'target population'.**

**[1]**

**Sample 1**

Target population is the group of people the researcher wishes to pick their sample from. For example, A-Level students.

**Sample 2**

Target population is the participants chose from the population to take part in an experiment of some kind.

## Question 2

**Explain two weaknesses of conducting research on-line.**

**[3+3]**

### **Sample 1**

One weakness on conducting research online is that the research may be fake or it may lie resulting in obtaining a poor sample of research.

Another weakness of conducting research online is that the aims of someone's research may differ to ones-self or others – so it may not be answering the question, it is also secondary information which may not be as reliable as the primary research.

### **Sample 2**

Conducting research online may make ethical issues harder to deal with. If your research may cause psychological harm on the participant, it's harder to debrief them fully when you're not face to face with them. This makes the communication debrief less sentimental.

Another weakness of conducting research online is that you don't know who exactly is participating in your study. The participants you gather online may give false information about themselves. Older participants may pretend to be younger and younger may pretend they're older. Males may pretend they're females and vice versa. Therefore, the research could lack reliability. Also, those on the internet are more likely to be younger individuals as elderly people tend to not understand how the internet works, this means the results may not be generalisable to those who don't use the internet/elderly people.

Question 3

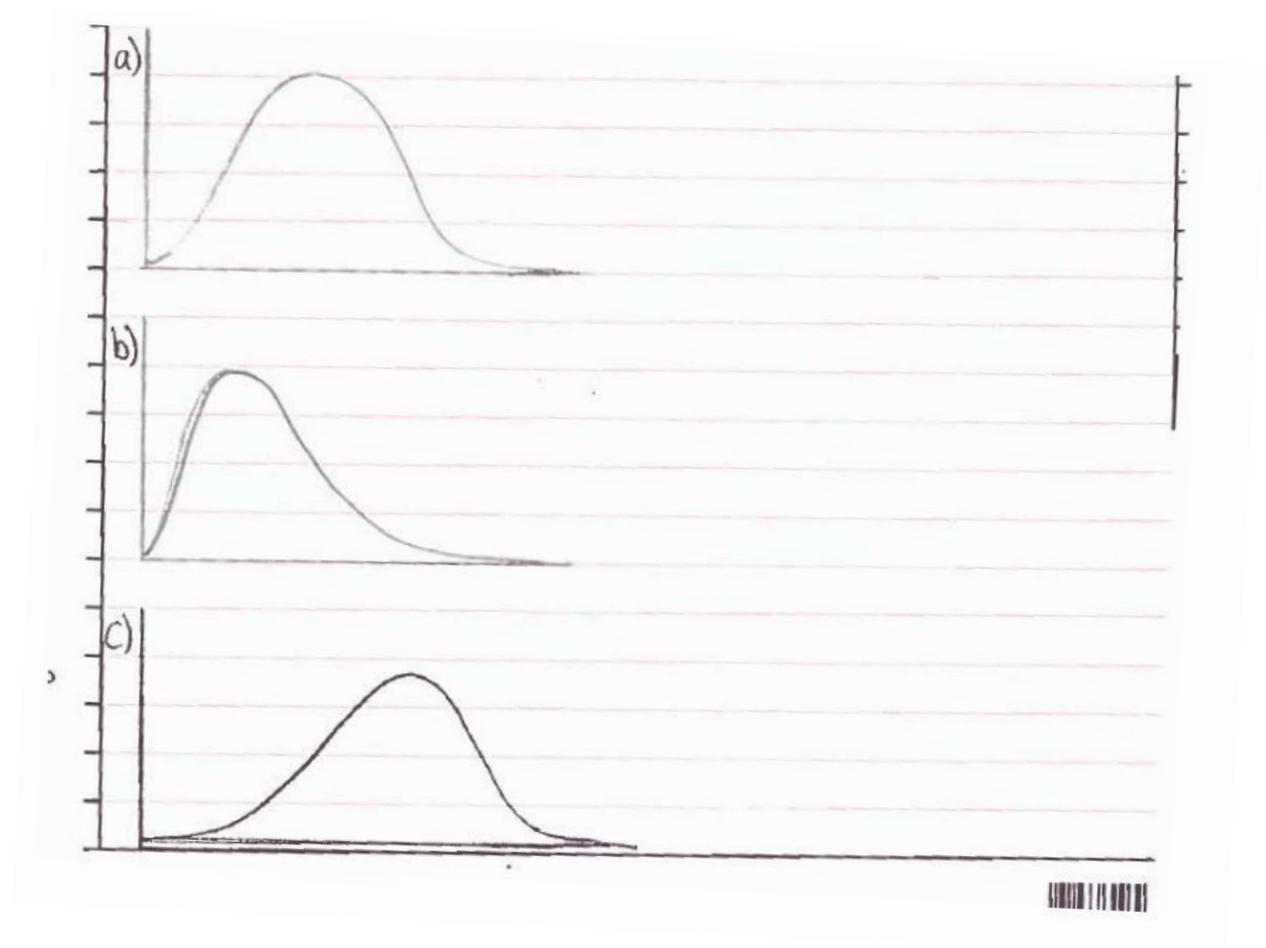
Sketch the following distribution curves:

(a) Normal distribution [1]

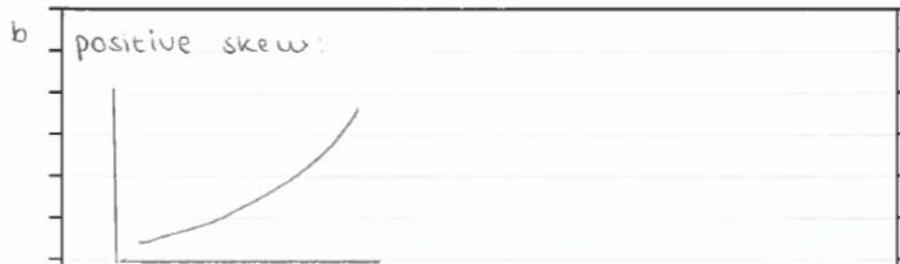
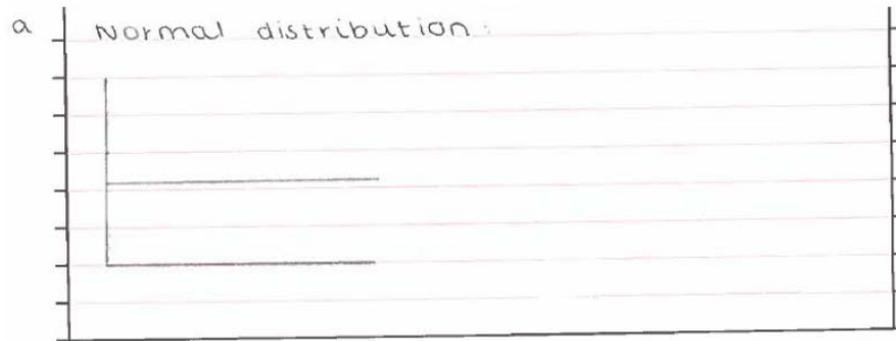
(b) Positive skew [1]

(c) Negative skew [1]

Sample 1



## Sample 2



Question 4 (a)

**Describe how brain scans have been used in psychology.**

**[6]**

**Sample 1**

Brain scans have been used in psychology for many years. One historic brain scan is an ECG. However, more recent brain scans such as an MRI and PET scans have been more widely used. Brain scans have been used in psychological research. For example, Raine et al used brain scans to examine the brains of murderers pleading not guilty by reason of insanity. This helped psychologists understand the differences in the brains of murderers pleading NGRI to a control group of non-murderers. Brain scans have also been used in cases of addiction, and in particular, the role of amygdala and other important brain areas (such as the prefrontal cortex) in developing an addiction.

**Sample 2**

Positron emission tomography scans (PET) work by injecting the patient with a slightly radioactive glucose tracer, which the most active areas of the brain use, a scan then detects the most active areas. Raine used PET scans to show how murderers have differences in brain regions such as the prefrontal cortex and amygdala.

Magnetic resonance imaging (MRI) works by using a magnetic field which causes the atoms to change their alignment and then when the magnet is turned off, the atoms emit various radio waves and these are detected and the brain structure is mapped out. Maguire used MRI scans to show that taxi drivers have larger hippocampi, this area has been linked with spatial awareness.

Computer axial tomography (CAT) works by combining a series of x-ray images to form a 3D image of the brain. Johnstone used CAT scans to demonstrate that schizophrenics have larger ventricles than non-schizophrenics.

Electroencephalogram (EEG) works by placing electrodes on the scalp and recording the electrical activity in different regions. Dement used EEG to show the different stages of sleep, for instance when going to sleep the brain waves slow down, but occasionally, they become fast and the eyes quickly dart

around, this is REM sleep and they found that when participants were woken up during REM, they were more likely to report that they had been dreaming.

#### Question 4 (b)

**Discuss the strengths and weaknesses of using brain scans in psychology. [6]**

##### **Sample 1**

One strength of brain scans is they are scientific and objective. This means that they are not open to bias and produce concrete accurate results. Brain scans can also easily be repeated by different psychologists. Therefore, brain scans allow studies to be conducted which have high validity, reliability and high levels of control. This could mean that therapies to treat certain behaviours are more effective which has great benefits for society. Brain scans also help to place psychology on an equal footing with the more natural sciences. However, brain scans are reductionist they ignore many other possible causal factors. This nature stance could affect the treatment of individuals with mental illness in the future. They also deny free will and suggest that our brain structure and activity determines us and all our future behaviour. This is a weakness as it may mean that behaviours are not fully explained and the responsibility for these behaviours is reduced. Brain scans are also very expensive to conduct and time consuming so many psychologists simply cannot access this research tool. This impedes the development and growth of psychology overall.

##### **Sample 2**

Brain scans have both negatives and positives about them. CAT scans involve a substantial amount of radiation to be administered. Therefore, CAT scans have to be done in stages, resulting in it being time consuming. However, CAT scans produce high quality images of the brain, which is useful when studying different areas of the brain. PET scans have readily been applied to research (Raine) and therefore it has allowed this field in psychology to further developed and explored. Brain scans have allowed researchers to explore why people are violent and has contributed to our understanding as to why people become criminals. Despite this, brain scans can be very time consuming, not suitable for everybody and can make people feel uncomfortable.

## Question 5

**Critically assess whether non-participant observations are more appropriate than participant observations in psychology.** [6]

### **Sample 1**

Non-participant observations are more appropriate as they have higher levels of control. The findings are less open to observer bias as they have no personal connection to the group. This increases the validity of results. Non-participant also ensures that as much of behaviour is recorded as possible. They are also less open to demand characteristics as participants are likely to change their behaviour when a new individual is added to the group whether they know they are an observer or not. This further reduces the validity as social desirability bias increases in participant observations. However, this is not the case in non-participant, so they have high validity. On the other hand, participant observation may be more appropriate as they can offer insights into behaviour that only occur within the group setting. This means that findings of non-participant observations are restricted and not complete. Participant observations could offer this more complete explanation for behaviour.

### **Sample 2**

Non-participant observations are when the researcher is not directly involved in the observation. However, participant observations are when researchers get involved in the observation. Participant observations allow the researcher to get a real feel for the observation and give them more insight. This could make findings more valid as they have first-hand experience of what they are researching. However, participant observations can also be challenging for researchers as they have the worry of the aim of the study being revealed. This can cause pressure on the researcher. However, non-participant observations allow researchers to assess behaviour from a distance. For example, a researcher watching children in their classroom environment. This allows the researcher to sit back and evaluate behaviour in detail.

Question 6a

**Evaluate the methodology used by Kohlberg (1968) in his research 'The child as a moral philosopher'.** [6]

### **Sample 1**

Kohlberg's research in 1968 was based on 'The child as a moral philosopher'. He used interviews and questions to analyse people's responses over a long period of time (longitudinal study). He came up with 9 hypothetical dilemmas.

His research on Heinz ('would you steal the drug?') lacks realism due to it being a hypothetical situation. Therefore, results found aren't that reliable as the participants wouldn't know how to react unless they're actually in that situation.

### **Sample 2**

Kohlberg used a series of interviews which had longitudinal and cross-cultural elements.

Interviews are subjective and non-scientific which can reduce the validity of results. The answers given by participants had to be interpreted by Kohlberg so findings are open to bias. This reduces the reliability as a different researcher could interpret the same answers in a different way. However, the longitudinal aspects of Kohlberg's study allows us to see a change in behaviour overtime and how we develop. This provides us with a lot of detailed information on a critical time period in our lives which could be applied to areas such as treatment of mental disorders and criminal behaviour.

The dilemmas used were also artificial which reduces the economical validity of the study. The participants may have also lied in their responses to them to appear in a more positive light. This means it is open to social desirability bias and demand characteristics which further reduced the validity of findings. The boys may also not have understood the dilemmas due to their age.

## Question 6b

**Evaluate the sample used by Kohlberg (1968) in his research 'The child as a moral philosopher'.** [6]

### **Sample 1**

Kohlberg's sample was acquired through opportunity sampling. This means that it was not representative of the wider population. From this the generalisability of findings is greatly reduced. From the sample, Kohlberg's study is also gender bias as he only studied boys. The androcentric stance minimalises the importance of women and makes the assumption that men and women are the same. Gilligan suggests that women's morality is not to do with justice but care, which is not reflected in Kohlberg's moral development stages. Therefore, the study is restricted in explaining behaviour due to the sample. Kohlberg did however study samples in different cultures which goes some way to increasing its generalisability but it can be argued that it is still not enough. The boys in the original study were all however American which suggests bias to a western culture when later it was found that development was slower in other countries. The sample size was good for a longitudinal study; however Kohlberg could have studied more than 75 participants at the same time to further solidify his findings.

### **Sample 2**

Kohlberg's sample consisted of all white males and therefore, as supported by Gilligan et al, is androcentric. No female participants were used, meaning that there is gender bias as Kohlberg ignores possible differences in women causing beta bias. However, in the longitudinal study, Kohlberg did go on to study different cultures such as people in the UK, Taiwan and Mexico. This means the study is cross-cultural and includes a number of different results, varying globally. Therefore, the sample is significantly good as it avoids any possible ethnocentrism.

## **INVESTIGATION ONE:**

**An experiment on the effect of context on an individual's perception.**

Question 7 a (i)

**Identify the experimental design used in your research and explain why this experimental design was the most appropriate for your research. [1+3]**

### **Sample 1**

In my research I used independent groups as it was the quickest and cheapest method to use. As a student, I do not have the resources to properly match up participants to each other and conduct a matched pairs design. This also be too costly. I decided not to use repeated measures to minimise demand characteristics, participants were highly like to work out the aim of the study in repeated conditions which would affect my ability to draw cause and effect.

### **Sample 2**

In my study I used independent measures because I wanted to see the differences in responses of either the participants seeing a crocodile or squirrel depending on the context of the image (surrounded by images of crocodiles or squirrels). This means they took part in one condition which is better than matched pair because they would do both conditions meaning they may spot the ambiguous figure in both conditions.

Question 7a (ii)

**Identify and fully justify the inferential statistical test that you used when analysing the data collected in your experiment. [4]**

### **Sample 1**

The inferential statistical test used was the chi-squared test. This was because it produced nominal data (numerical tallies on what they saw in the picture tree/face). It was an independent design, meaning that the participants only saw the images once to reduce order effect. Finally I was looking for a difference to find out whether perception is changed when shown specific images before the ambiguous figure (e.g. trees).

### **Sample 2**

I used chi-squared for my inferential statistical test because it was a repeated measures design and therefore related and the data obtained was nominal – two distinct categories. These categories were either you saw a donkey or a seal in either condition.

## Question 7b

**Explain how you managed two ethical issues that arose in your research.**

**[3+3]**

### **Sample 1**

An ethical issue that I managed in my research was informed consent. I explained to the participants they had the right to withdraw at any time and briefed them explaining what the research was about and what it was going to be used for (perception and context). I then asked if they still wished to continue and gave them a consent form to sign to validate whether they wished to continue or not.

Another issue I managed was confidentiality I explained to the participant that all answers given were to remain anonymous and no personal info such as name/address were to be given to anyone as they have the right to maintain information about themselves.

### **Sample 2**

The two ethical issues that arose were consent and deception, as the participants weren't informed of the true aim of the study. We dealt with this ensuring the participants they had the right to withdraw and we also fully debriefed them after the study and asked for their consent.

Question 7c

**Suggest two ways in which your experiment could be improved. [6]**

### **Sample 1**

One way in which I could improve my experiments by using a different target population. Instead of using all students I would use people of different ages and abilities to see if the results would vary in anyway. I'd use a different sampling method to select my participants, for example stratified or systematic in order to make the results more generalisable. Another improvement I would make would be whilst participants were looking at the pictures. I would play music in one condition and not the other. This will give me a range of results which I will be able to compare and contrast.

### **Sample 2**

In all research, our sample was all students. Therefore, one way we could improve is by obtaining participants who are not just students. This would make our sample more generalisable to the public.

Another way our experiment could be improved is by doing the experiment in a different area. This would ensure that ethnocentrism does not become an issue. Again, it would also make our research more generalisable.

## INVESTIGATION TWO:

**A correlational research-relationship between intelligence and another psychological variable (of the learner's choice).**

Question 8a

**Identify the fully operationalised co-variable in your research other than intelligence. [2]**

### **Sample 1**

IV- Level of intelligence shown through how many GCSE A\*-C grades they had received

DV- Level of emotional intelligence calculated from an online questionnaire.

### **Sample 2**

Our co-variable was the number of siblings. We got this information by asking the participant.

## Question 8b

**With reference to your own correlational research, explain the way you dealt with reliability.** [4]

### **Sample 1**

To make sure I had a high reliability. I produced a set of standardised instructions to make sure every participant performed the same things throughout my investigation. Before taking part, I would brief the participant, allow them to leave, then request their GCSE grades. Ask them to fill in the emotional intelligence questionnaire, then debrief them. This process was the exact same for every participant.

As my data was quantitative data (numerical). It makes replicability easier, as well as analysing.

### **Sample 2**

I overcome issues of reliability in my study by using standardised procedures; such as them all having the same brief and debrief, as well as writing down their response to every slide, not just the one with the ambiguous figure on. I also operationalised intelligence to a common way to measure intelligence such as GCSE Grades A\*-C. Both these factors increased the reliability of the research, thus creating inter-rater reliability.

### Question 8c

**With reference to your own correlational research, explain how you dealt with validity.**

**[4]**

#### **Sample 1**

I dealt with validity by using people at my school. This reduces the chance of social desirability bias because I have known them for 7 years, meaning it reduces the need for them to impress me with their grades. By going through educational system with them and also transitioning into sixth form with them. It reduces their risk of telling lies about their grades because I know their level of intelligence/predicted grades etc.

I also asked the number of social media apps on their phone first because this allows them to become confident and comfortable this being more truthful for the GCSE grades A\*-C (number).

These factors reduce social desirability bias and demand characteristics.

#### **Sample 2**

We ensured that we had ecological validity by focusing on two variables that are part of everyday life and much of the population uses them; GCSE grades and social media apps. Another way in which we ensured validity is making sure we used short questions to find out our required information, this would limit the likelihood of boredom effects which means that the responses we gained were likely to be valid.

### Question 9

A Psychology teacher was concerned about the amount of stress her students were experiencing in preparation for their upcoming A level examinations. One month before the examination, she decided to offer her students the opportunity to learn how to meditate. 17 of her students decided to learn how to meditate and practiced meditation for at least 30 minutes per day. 15 of her students decided not to learn how to meditate. As they entered the exam room, she asked each student to rate their stress levels as either 'no stress', 'some stress' or 'very stressed'. The psychology teacher decided to compare the stress ratings of those students who meditated with those students who didn't meditate using a Chi-Square test.

Table of stress ratings of those students who meditated compared with those students who didn't meditate.

	No Stress	Some Stress	Very Stressed
Students who meditated	5	5	7
Students who did not meditate	2	3	10

9 (i) Identify the sampling technique that was used in this research. [1]

ii) Explain one advantage and one disadvantage of using this sampling technique in this research. [2+2]

#### Sample 1

ai) The sampling technique used was volunteer sampling.

aii) An advantage would be that it is quick and easy to obtain participants, however, it may be a biased sample (volunteer sample) as they all are willing and motivated to participate, which may not be generalisable to everyone.

## Sample 2

ai) Opportunity sample.

aii) An advantage of opportunity sample is that it allowed the psychology teacher to use people who are available at the time (i.e. her A Level psychology students), meaning she can get a large sample of 32 students. This allows for more comparisons to be made, in a short amount of time (one month), which would be difficult to do with other methods such as stratified, where time will be needed to devise a sampling frame.

However, a disadvantage of opportunity sample is that it can create a biased sample for example the psychology teacher only asked her A Level psychology students meaning it unrepresentative because it is only psychology and does not take into account that the stress level may vary in different subjects, as well as this, psychology students may have studied mindfulness in their course in relation to the positive approach, and therefore have greater understanding of how to apply this. Thus decreasing the validity.

**(b) (i) Define the term 'social desirability'. [2]**

**ii) Explain how social desirability might have influenced this research. [2]**

### **Sample 1**

bi) 'Social desirability' is answering or behaving in a manner that the participants deems appropriate/wanted by the researcher.

bii) the students may exaggerate or alter their answers to please the teacher as she is asking directly.

### **Sample 2**

i) Social desirability refers to how participants change their behaviour to impress the researcher – they act how they are expected to behave.

ii) Social desirability may have influenced the research because the experimenter was the student's teacher, meaning they have said they had 'no stress' or 'some stress' in the exam hall to impress the teacher that efforts to decrease stress had worked when they actually felt very stressed in the exam room.

### Question 9c

**The psychology teacher analysed her results by using a Chi-Square test. Explain why this test was an appropriate inferential statistical test for this research.**

**[4]**

#### **Sample 1**

Chi squared was appropriate for this research because the psychology teacher used independent measures by 17 of her students meditating for 30 minutes per day and the 15 others didn't learn to meditate; this meaning it was unrelated data. The psychology teacher was also looking for a difference in those who meditated and who didn't in relation to whether they felt 'no stress' or 'very stressed'. It was also nominal data due to the categories of stress level; no, some and very stressed, this means the psychology teacher was counting frequencies for the students answers who did meditate and those who didn't.

#### **Sample 2**

The chi – square test may have been appropriate for this research as she was testing to find a relationship, using an independent measures design and using ordinal data.

Question 9d i + ii

**Following her initial research the Psychology teacher decided to collect some qualitative data from the students who meditated.**

**(i) Identify one method that could be used to collect qualitative data about the experiences of the students who meditated. [1]**

**ii) Justify why the choice of method you identified in (d)(i) would be appropriate in this research. [3]**

### **Sample 1**

i) Questionnaire

ii) Questionnaires would be appropriate as they allow the students to show their thoughts and feelings about meditating and the exam in more detail. Also as most questionnaires are anonymous, the students may avoid social desirability as they can give their honest feelings without any consequences; they won't fear upsetting their teacher. Also as open questions can be used on questionnaires, qualitative data can be produced.

### **Sample 2**

i) One method that could be used to collect qualitative data about the experiences of the students who meditated is structured interviews.

ii) This is because they would allow the participant to explain how they felt through answering questions provided. Open and closed questions provide a range of answers.

## Question 10

A researcher wanted to investigate if individuals who have a fear of flying (aerophobes) demonstrate lower levels of anxiety if they fly in First Class than if they fly in Economy Class. The researcher asked 12 participants who had just completed a 'Flying without Fear' course to take a short flight between London and Manchester in a First Class seat. The same 12 participants were then asked to take the return flight between Manchester and London in an Economy Class seat. After each flight, the participants were asked to self-report their ratings of anxiety, using the following scale: 0 = no anxiety to 10 = highest level of possible anxiety.

**Table of anxiety ratings**

Participant Number	1	2	3	4	5	6	7	8	9	10	11	12
Anxiety rating after First Class flight	5	3	5	5	4	3	5	6	2	4	6	4
Anxiety rating after Economy Class flight	7	3	6	5	6	5	6	5	8	6	9	8

**(a) Explain one disadvantage of using a self-report method to rate the anxiety of the participants in this research. [2]**

### **Sample 1**

Self-report methods are open to social desirability bias. Participants could lie about the fear they experience. This reduces validity.

### **Sample 2**

One disadvantage of using a self-report is that it is biased as it is down to the interpretation of the researcher.

Question 10b i + ii

**(i) Identify the experimental design used in this research. [1]**

**(ii) Explain one disadvantage of using this experimental design in this research. [2]**

### **Sample 1**

i) Repeated measures

ii) May have order effects, which means the participant may become more or less anxious on the second flight, may have lower anxiety as they've already flown once (practice effects) or they may become more anxious as they have to fly more than once.

### **Sample 2**

i) Questionnaire

ii) Individuals may lie due to social desirability or other variables.

Question 10c i + ii

**(i) Showing your calculations, calculate the mean anxiety ratings of the 12 participants after the First Class flight. [2]**

**(ii) Give one advantage and one disadvantage of using the mean as a measure of central tendency in this research. [2+2]**

### **Sample 1**

i) Add up anxiety ratings: 52

$$52/12 = 4.33333333333333 - 4.4$$

ii) An advantage of using mean is that it gives an exact number. A disadvantage would be it doesn't tell us the difference between the data.

### **Sample 2**

i)  $5+3+5+5+4+3+5+6+2+4+6+4=52$

$$52/12=4.3$$

ii) One disadvantage of using the mean as a measure of central tendency is the fact that it is the most 'sensitive' measure which means the answer it gives is closer to the exact values. However, a disadvantage of using the mean as a method of central tendency is the fact that it is easily affected by extreme values in a set of data whereas the median and mode are not.

Question 10d

**Explain why the ethical issue, 'risk of stress, anxiety, humiliation or pain', might be relevant to this research. [2]**

**Sample 1**

The ethical issue, 'risk of stress, anxiety, humiliation, or pain' might be relevant to this study as it involves using individuals who are afraid of flying (aerophobes) and making them fly. This will undoubtedly cause stress and anxiety for the individuals, which is unethical. To try and combat this, all participants should be made aware of what the study is before it starts.

**Sample 2**

The ethical issue, 'risk of stress, anxiety, humiliation, or pain' might be relevant due to participants rating their anxiety levels from a possibly stressful experience may further increase anxiety or stress when having to then rate the experience.