Please check the examination de Candidate surname	etails below befo		our candidate information
Pearson Edexcel Level 3 GCE	Centre Nui	nber	Candidate Number
Friday 5 June	e 202 (0	
Afternoon (Time: 2 hours)	Pa _l	oer Referei	nce 9PS0/02
Psychology Advanced Paper 2: Applications	of Psych	ology	
You do not need any other m	aterials.		Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer ALL questions in Section A. Answer ALL questions from one of the three options in Section B.
- Answer the questions in the spaces provided
 - there may be more space than you need.

Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets
 - use this as a guide as to how much time to spend on each question.
- The list of formulae and statistical tables are printed at the start of this paper.
- Candidates may use a calculator.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶





FORMULAE AND STATISTICAL TABLES

Standard deviation (sample estimate)

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

Spearman's rank correlation coefficient

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

Critical values for Spearman's rank

Level of significance for a one-tailed test

	Le	vei oi signiii	icanice for a	one-talled t	est
	0.05	0.025	0.01	0.005	0.0025
	Le	vel of signifi	icance for a	two-tailed t	est
Ν	0.10	0.05	0.025	0.01	0.005
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830
11	0.536	0.618	0.709	0.755	0.800
12	0.503	0.587	0.678	0.727	0.769
13	0.484	0.560	0.648	0.703	0.747
14	0.464	0.538	0.626	0.679	0.723
15	0.446	0.521	0.604	0.654	0.700
16	0.429	0.503	0.582	0.635	0.679
17	0.414	0.485	0.566	0.615	0.662
18	0.401	0.472	0.550	0.600	0.643
19	0.391	0.460	0.535	0.584	0.628
20	0.380	0.447	0.520	0.570	0.612
21	0.370	0.435	0.508	0.556	0.599
22	0.361	0.425	0.496	0.544	0.586
23	0.353	0.415	0.486	0.532	0.573
24	0.344	0.406	0.476	0.521	0.562
25	0.337	0.398	0.466	0.511	0.551
26	0.331	0.390	0.457	0.501	0.541
27	0.324	0.382	0.448	0.491	0.531
28	0.317	0.375	0.440	0.483	0.522
29	0.312	0.368	0.433	0.475	0.513
30	0.306	0.362	0.425	0.467	0.504

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



Chi-squared distribution formula

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

Critical values for chi-squared distribution

		one-tail	

	0.10	0.05	0.025	0.01	0.005	0.0005
		Level of s	ignificance	for a two-	tailed test	
df	0.20	0.10	0.05	0.025	0.01	0.001
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59
11	14.63	17.28	19.68	21.92	24.73	31.26
12	15.81	18.55	21.03	23.34	26.22	32.91
13	16.99	19.81	22.36	24.74	27.69	34.53
14	18.15	21.06	23.69	26.12	29.14	36.12
15	19.31	22.31	25.00	27.49	30.58	37.70
16	20.47	23.54	26.30	28.85	32.00	39.25
17	21.62	24.77	27.59	30.19	33.41	40.79
18	22.76	25.99	28.87	31.53	34.81	42.31
19	23.90	27.20	30.14	32.85	36.19	43.82
20	25.04	28.41	31.41	34.17	37.57	45.32
21	26.17	29.62	32.67	35.48	38.93	46.80
22	27.30	30.81	33.92	36.78	40.29	48.27
23	28.43	32.01	35.17	38.08	41.64	49.73
24	29.55	33.20	36.42	39.36	42.98	51.18
25	30.68	34.38	37.65	40.65	44.31	52.62
26	31.80	35.56	38.89	41.92	45.64	54.05
27	32.91	36.74	40.11	43.20	46.96	55.48
28	34.03	37.92	41.34	44.46	48.28	56.89
29	35.14	39.09	42.56	45.72	49.59	58.30
30	36.25	40.26	43.77	46.98	50.89	59.70
40	47.27	51.81	55.76	59.34	63.69	73.40
50	58.16	63.17	67.51	71.42	76.15	86.66
60	68.97	74.40	79.08	83.30	88.38	99.61
70	79.72	85.53	90.53	95.02	100.43	112.32

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



Mann-Whitney U test formulae

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

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

(U is the smaller of U_a and U_b)

Critical values for the Mann-Whitney U test

								~								
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
N _a																
$p \leq 0.0$	5 (one	e-taile	ed), p	≤ 0.10	0 (two	-taile	ed)									
5	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
6	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
7	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39
8	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47
9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
10	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62
11	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69
12	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77
13	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84
14	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92
15	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100
16	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107
17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115
18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123
19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130
20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138

N_b

								N _b								
N _a	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
_a p ≤ 0.0	1 (on	e-tail	ed). <i>n</i>	< 0.0	2 (tw	o-tail	ed)									
ρ <u>-</u> 0.0	1	2	3	4	5	6	7 7	8	9	10	11	12	13	14	15	16
6	2	3	4	6	7	8	9	11	12	13	15	16	18	19	20	22
7	3	4	6	7	9	11	12	14	16	17	19	21	23	24	26	28
8	4	6	7	9	11	13	15	17	20	22	24	26	28	30	32	34
9	5	7	9	11	14	16	18	21	23	26	28	31	33	36	38	40
10	6	8	11	13	16	19	22	24	27	30	33	36	38	41	44	47
11	7	9	12	15	18	22	25	28	31	34	37	41	44	47	50	53
12	8	11	14	17	21	24	28	31	35	38	42	46	49	53	56	60
13	9	12	16	20	23	27	31	35	39	43	47	51	55	59	63	67
14	10	13	17	22	26	30	34	38	43	47	51	56	60	65	69	73
15	11	15	19	24	28	33	37	42	47	51	56	61	66	70	75	80
16	12	16	21	26	31	36	41	46	51	56	61	66	71	76	82	87
17	13	18	23	28	33	38	44	49	55	60	66	71	71	82	88	93
18	14	19	23 24	30	36	36 41	47	53	59	65		76	82	88	94	10
											70 75					
19	15	20	26	32	38	44 47	50	56	63	69 72	75	82	88	94	101	10
20	16	22	28	34	40	47	53	60	67	73	80	87	93	100	107	114
								N _b								
N _a	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
p ≤ 0.0	25 (o	ne-ta	iled),	<i>p</i> ≤ 0.	.05 (tv	vo-ta	iled)									
5	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
6	3	5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
7	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
8	6	8	10	13	15	17	19	22	24	26	29	31	34	36	38	41
9	7	10	12	15	17	20	23	26	28	31	34	37	39	42	45	48
10	8	11	14	17	20	23	26	29	33	36	39	42	45	48	52	55
11	9	13	16	19	23	26	30	33	37	40	44	47	51	55	58	62
12	11	14	18	22	26	29	33	37	41	45	49	53	57	61	65	69
13	12	16	20	24	28	33	37	41	45	50	54	59	63	67	72	76
14	13	17	22	26	31	36	40	45	50	55	59	64	67	74	78	83
15	14	19	24	29	34	39	44	49	54	59	64	70	75	80	85	90
16	15	21	26	31	37	42	47 51	53	59	64	70 75	75 01	81	86	92	98
17	17	22	28	34	39	45	51 55	57	63	67 74	75	81	87	93	99	10.
18	18	24	30	36	42 45	48 52	55 50	61	67 72	74 70	80	86	93	99	106	112
19	19	25	32	38	45	52	58	65	72	78	85	92	99	106	113	119



								$N_{\rm b}$								
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
N _a																
$p \leq 0.0$	05 (o	ne-ta	iled),	<i>p</i> ≤ 0.	01 (tv	vo-ta	iled)									
5	0	1	1	2	3	4	5	6	7	7	8	9	10	11	12	13
6	1	2	3	4	5	6	7	9	10	11	12	13	15	16	17	18
7	1	3	4	6	7	9	10	12	13	15	16	18	19	21	22	24
8	2	4	6	7	9	11	13	15	17	18	20	22	24	26	28	30
9	3	5	7	9	11	13	16	18	20	22	24	27	29	31	33	36
10	4	6	9	11	13	16	18	21	24	26	29	31	34	37	39	42
11	5	7	10	13	16	18	21	24	27	30	33	36	39	42	45	48
12	6	9	12	15	18	21	24	27	31	34	37	41	44	47	51	54
13	7	10	13	17	20	24	27	31	34	38	42	45	49	53	56	60
14	7	11	15	18	22	26	30	34	38	42	46	50	54	58	63	67
15	8	12	16	20	24	29	33	37	42	46	51	55	60	64	69	73
16	9	13	18	22	27	31	36	41	45	50	55	60	65	70	74	79
17	10	15	19	24	29	34	39	44	49	54	60	65	70	75	81	86
18	11	16	21	26	31	37	42	47	53	58	64	70	75	81	87	92
19	12	17	22	28	33	39	45	51	56	63	69	74	81	87	93	99
20	13	18	24	30	36	42	48	54	60	67	73	79	86	92	99	105

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

Wilcoxon Signed Ranks test process

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

Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference

- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)
- N is the number of scores left, ignore those with 0 difference

Critical values for the Wilcoxon Signed Ranks test

Level of	significance	for a one-t	tailed test
0.01	- 0	025	0.01

	0.03	0.023	0.01
	Level of signif	icance for a two-	tailed test
n	0.1	0.05	0.02
N=5	0	_	_
6	2	0	_
7	3	2	0
8	5	3	1
9	8	5	3
10	11	8	5
11	13	10	7
12	17	13	9

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

SECTION A: CLINICAL PSYCHOLOGY

Answer ALL questions.

1	In your studies of clinical psychology you will have learned about schizophrenia.
	Describe three features of schizophrenia.
1	
2	
3	
	(Total for Question 1 = 3 marks)

2 Andi is a clinical psychologist who is investigating whether family relationships improve or deteriorate once a person has been diagnosed with a mental health disorder.

Andi is going to interview two separate groups.

- Group A: Patients and families waiting for a diagnosis of a mental health disorder.
- Group B: Patients and families who already have a diagnosis of a mental health disorder.

Andi carries out interviews with patients and their families. She uses both open questions and closed questions in her interviews.

a)	Suggest one open question Andi may use in her interview about the influence of
	diagnosis on family relationships.

(1)



(b) Andi collated the data from her closed questions. Her results are shown in **Table 1**.

	Patient and family waiting for a diagnosis	Patient and family who already have a diagnosis
Family relationships improved	10	25
Family relationships deteriorated	20	15

Table 1

Andi carried out a chi-squared test on her data.

State **two** reasons why Andi used the chi-squared test on her data.

(2)(c) Andi found an observed / calculated value of 5.84 when df=1 when she calculated the chi-squared test for her investigation. Explain whether Andi's results were significant for a one-tailed (directional) hypothesis when p≤0.01. (2)



	(4)
	(4)
Strength	()
-	
Weakness	
(Total for Question 2 = 9 marl	ks)

3	In your studies of clinical psychology you will have learned about Carlsson et al. (2000).	
	(a) State two aims of Carlsson et al. (2000).	(2)
1		
2		

12

(b) Carlsson et al. (2000) collected secondary data.	
Explain one strength and one weakness of using secondary data in clinical psychology.	
	(4)
Strength	
Weakness	
weakiiess	
(Total for Question 3 =	6 marks)



4	Hector and his mother have schizophrenia. Hector has hallucinations and hears voices telling him what to do. He suffers from delusions, for example he thinks he is in charge of the country. Hector also has disordered thinking as he is unable to make connections between his thoughts.	
	His doctor believes that Hector's schizophrenia is caused by neurotransmitters, and has given him anti-psychotic medication to treat his schizophrenia.	
	Discuss the function of neurotransmitters as an explanation of Hector's schizophrenia.	
	You must make reference to the context in your answer.	(8)



(Total for Question 4 = 8 marks)



5	Assess the validity of diagnoses of mental health disorders through the use of classification systems.		
		(8)	
••••			
••••			
•••••			
•••••			



Total for Question 5 = 8 marks)



6	In your studies of clinical psychology you will have learned about one of the following disorders:	
	Anorexia nervosa	
	Obsessive-compulsive disorder (OCD)	
	Unipolar depression.	
	Evaluate one psychological treatment for your chosen disorder.	(20)
Ch	osen disorder	(20)









	,
(Total for Question 6 = 20 marks)	
(Total for Question 0 – 20 Marks)	_



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SECTION B

Answer questions from ONE option in this section.

OPTION 1: CRIMINOLOGICAL PSYCHOLOGY

Answer ALL questions.

If you answer OPTION 1 put a cross in the box \square .

7	During your studies in criminological psychology you will have carried out a practical investigation.	
	(a) State the aim of your practical investigation in criminological psychology.	(1)
	(b) Describe the procedure of your practical investigation in criminological psychology.	(4)
	(Total for Question 7 = 5 ma	rks)



8 Brie carried out an experiment to see the effect that labelling had on participants' perception of the probability of someone committing a crime. She selected her participants from students who were available in the refectory on one weekday during lunchtime.

She gave two separate groups of participants a different scenario to read.

- Condition A: the scenario stated that the person had already been involved in anti-social behaviour.
- Condition B: the scenario did not state anything about the person's previous behaviour.

Brie then asked the participants to rate how probable it was that the person in the scenario would commit a crime. A score of 7 was 'highly likely to commit a crime' and a score of 0 was 'highly unlikely to commit a crime'.

a) Identify the sampling technique used by Brie in her experiment.	
a) identify the sampling technique used by blie in her experiment.	(1)



The results from the experiment carried out by Brie are shown in **Table 2**.

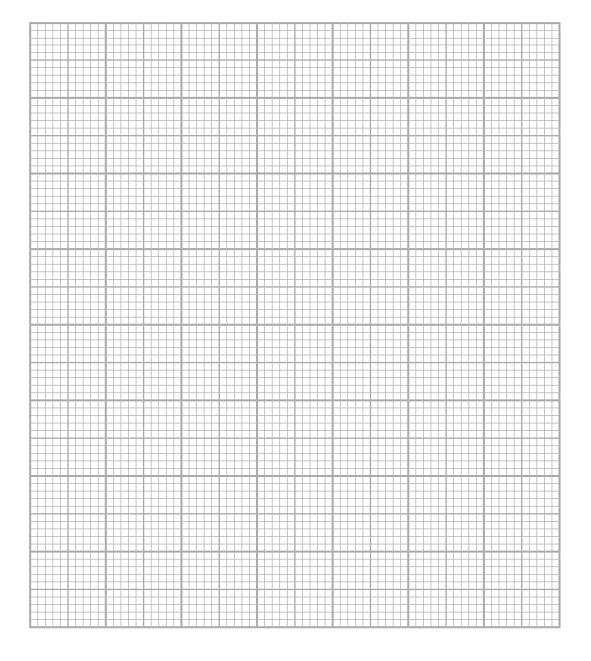
	Condition A: the scenario stated that the person had already been involved in anti-social behaviour	Condition B: the scenario did not state anything about the person's previous behaviour
Mean score (out of 7) for the participants' perception of how likely the person was to commit a crime	5	3

Table 2

(b)	Draw a	suitable	graph to	represent the	results	shown in	Table 2.
(~)	Diaw a	Januaric	grapiito	represent the	i Coaico	3110 VVII 111	

~		

Title	 	



(c) Brie used an independent groups experimental/research design.	
Compare independent groups and matched pairs experimental/research designs as used in criminological psychology.	
	(3)
(Total for Question 8 = 7 ma	rks)

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9	Pat recently fell over and hit his head on a hard surface. As a result of the accident the doctors diagnosed him with a brain injury.	
	Pat has just been arrested for being involved in a fight, which witnesses say he caused. His friends no longer want to go out with him as he often gets into fights and recently threw an object at one of his own friends. He is also aggressive at home, shouting at family members and losing his temper quickly.	
	Discuss how far brain injury can account for the aggression shown by Pat.	
	You must make reference to the context in your answer.	
		(8)



(Total for Question 9 = 8 marks)



10	Cassandra is on trial for a recent case of burglary. She is 24 years old, white, of slim build and considered to be attractive. Her lawyer advises her to dress in a smart suit for the trial to make a good impression on the jury. She has a strong local accent, which is considered to be an unpopular accent. The trial is taking place over 100 miles away from Cassandra's home town, as this is where the alleged burglary took place. To what extent may Cassandra's characteristics affect the jury's decision-making in her trial? You must make reference to the context in your answer.	
		(16)







	(Total for Question 10 = 16 marks)
TOTAL	FOR SECTION B OPTION 1 = 36 MARKS



OPTION 2: CHILD PSYCHOLOGY

Answer ALL questions.

11	During your studies in child psychology you will have carried out a practical investigation.			
	(a) State the aim of your practical investigation in child psychology.	(1)		
	(b) Describe the procedure of your practical investigation in child psychology.	(4)		
	(Total for Question 11 = 5 ma	arks)		





12 Brie carried out an observation to see the effects of day care on one-year-olds' reactions to their mother leaving the room. She selected her participants from those who were available at a local day care centre one Monday.

She had two groups of one-year-old children.

- Condition A: the one-year-olds spent less than 15 hours a week in day care.
- Condition B: the one-year-olds spent over 30 hours a week in day care.

She set up a playroom and asked the mothers to play with their child for five minutes and then leave the room. Brie then rated the level of crying of the one-year-olds. A score of 7 was 'intense crying' and a score of 0 was 'no crying at all'.

(a)	Identify the	sampling	technique	used by	Brie in	her investigation.
-----	--------------	----------	-----------	---------	---------	--------------------

(1)

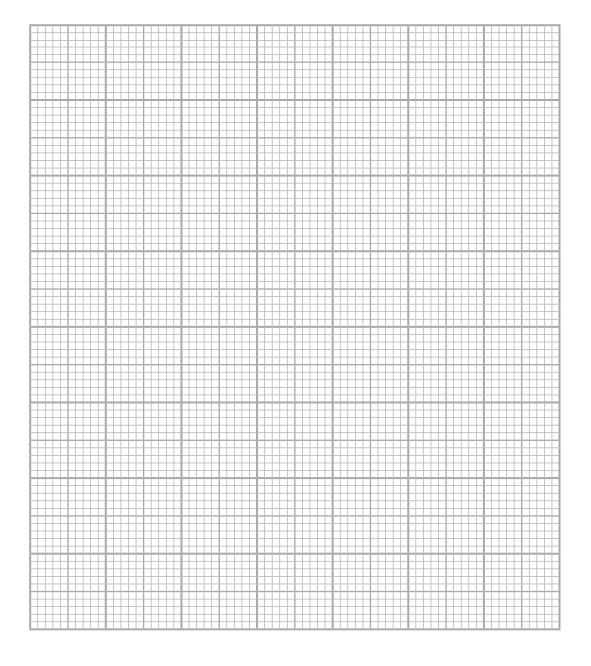
The results from the observation carried out by Brie are shown in **Table 3**.

	Condition A: the one-year-olds spent less than 15 hours a week in day care	Condition B: the one-year-olds spent more than 30 hours a week in day care
Mean score (out of 7) for the intensity of the crying.	5	3

Table 3



(b) Draw a suitable graph to represent the results shown in Table 3 .	
	(3)
Title	



(c) Brie used an independent groups experimental/research design.			
Compare independe as used in child psyc	nt groups and matched pa	irs experimental/research	designs
as asca in cima psyc			(3)
		(Total for Question 1	2 – 7 marks)
		(Total for Question 12	2 — / IIIdiks)



13	Pat has recently been diagnosed as having autism. He has trouble making friends as he often gets into arguments about other children breaking the rules of games. He also finds it difficult to communicate with other people as he finds it hard to interpret their facial expressions. Pat does not like playing imaginative games with his brother, who does not have autism, as he finds it hard to imagine a cardboard box is a ship.		
	His parents have read an article that suggests that the causes of autism are biological.		
	Discuss how far one other explanation can account for Pat's autism.		
	You must make reference to the context in your answer.	(8)	



(To	tal for Question 13 = 8 marks)



14	Cassandra has twin boys, Alexander and Julius, who attend day care. Cassandra has noticed that the boys react differently when she picks them up from day care; Alexander is happy to see her whilst Julius ignores her.	
	Alexander has many friends at day care who he plays word games with unlike Julius who often plays on his own. Alexander is more cognitively advanced for his age than his brother as he is starting to recognise letters whereas Julius cannot.	
	Assess the effects of day care on the development of Alexander and Julius.	
	You must make reference to the context in your answer.	
		(16)







	(Total for Question 14 - 16 marks)
	(Total for Question 14 = 16 marks)
TOTAL FO	R SECTION B OPTION 2 = 36 MARKS
ISIALIS	



OPTION 3: HEALTH PSYCHOLOGY

Answer ALL questions.

If you answer OPTION 3 put a cross in the box 🛛 .

During your studies in health psychology you will have carried out a practical investigation.			
(a) State the aim of your practical investigation in health psychology.	(1)		
(b) Describe the procedure of your practical investigation in health psychology.	(4)		
(Total for Question 15 = 5	marks)		





16 Brie carried out an experiment to see the effect of a new drug for treating heroin addiction. The new drug was developed to reduce the impact of withdrawal symptoms. She selected heroin addicts from those who were available at a local rehabilitation centre one Monday.

She compared two groups of heroin addicts.

- Condition A: the heroin addicts who were not given the new drug.
- Condition B: the heroin addicts who were given the new drug.

Brie then asked the heroin addicts to rate the intensity of their withdrawal symptoms. A score of 7 was 'high intensity of withdrawal symptoms' and a score of 0 was 'low intensity of withdrawal symptoms'.

(a) I	dentify the	sampling	technique	used by	Brie in hei	experiment
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(1)

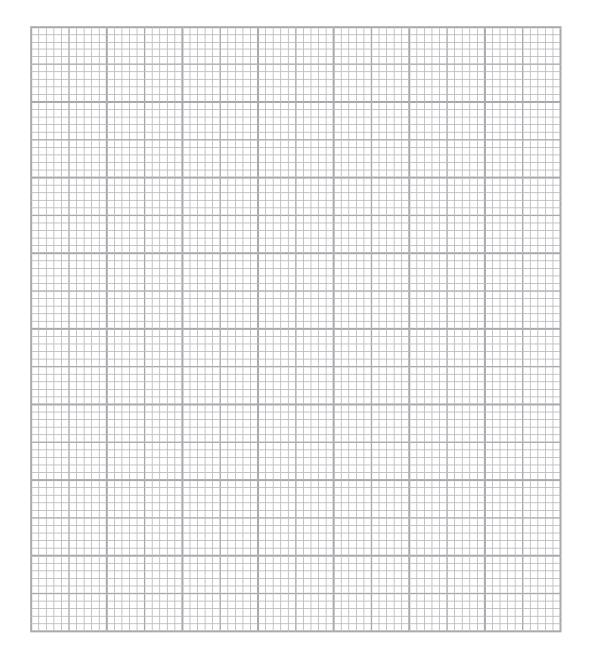
The results from the experiment carried out by Brie are shown in **Table 4**.

	Condition A: the heroin addicts who were not given the new drug	Condition B: the heroin addicts who were given the new drug
Mean score (out of 7) for the intensity of the withdrawal symptoms.	5	3

Table 4



(b) Draw a suitable graph to represent the results shown in Table 4 .	
	(3)
Title	
Title	



(c) Brie used an independent groups experimental/research design.	
Compare independent groups and matched pairs experimental/research as used in health psychology.	designs
	(3)
(Total for Question 1	6 = 7 marks)



17	Pat is addicted to alcohol and so is his father. When Pat was a child he saw his father drink alcohol. His father was often in a bad mood until he had his first alcoholic drink.	
	When Pat drinks alcohol he feels more relaxed and calm. He often has a drink after his evening meal, and now wants a drink every time he has his evening meal. He can now drink a lot of alcohol without feeling the effects.	
	Pat also drinks when he is out with his friends who praise the person that can drink the most alcohol. If Pat does not have a drink during the day he feels ill.	
	Discuss how far one learning explanation can account for Pat's addiction to alcohol.	
	You must make reference to the context in your answer.	
		(8)



	,
Total for Question 17 = 8	3 marks)



18	Cassandra is addicted to nicotine, and smokes over 30 cigarettes a day. When she smokes a cigarette Cassandra feels the effects almost immediately. She sometimes feels more alert, and sometimes feels more relaxed. She also feels happier and finds her memory improves after smoking a cigarette.	
	When she started smoking cigarettes Cassandra only had around five cigarettes a day but this quickly increased as she found that the cigarettes were not having as much effect.	/,
	To what extent can one biological explanation account for Cassandra's addiction to nicotine?	
	You must make reference to the context in your answer.	(16)





	(Total for Question 18 = 16 marks)
TOTAL FOR SECTION B OPTION 3 = 36 MARKS	

